

AMERICAN BEE JOURNAL

The Oldest Bee Journal in the English Language

ESTABLISHED BY SAMUEL WAGNER IN 1861

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Life Begins at "75"

No one could feel very old around the Lewis plant if he wanted to. Albert Otto would not let him. Having completed 50 years at making bee-hives in the Lewis plant, Albert hands us all a laugh when we show any signs of "slipping."

Anyone who puts in 50 years at making one product learns a lot about it. He is the kind of man Albert Otto and many others here are—a craftsman, who takes pride in seeing that Lewis Beeware is craft-made. Thus it has come to deserve the title given by thousands of users all over the world—the "Standard of the Beekeeping World."



ALBERT OTTO,
50 years an employee



The tiny plant in
Watertown in 1863

Antedating the service of the president of the company by five years, Mr. Otto is only two years ahead of John Gruel, 6 years longer here than Louis Schultz and can give the laugh to 10 others whose service exceeds 25 to 38 years. In this group are the men whose adherence to manufacturing standards have made possible your satisfaction with Lewis Beeware.

Starting when Civil War guns were booming and in the little plant pictured at the left, Lewis this year celebrates a "Diamond Anniversary" at making Beeware. Keeping up the standards already set by these woodworking craftsmen and by improving, experimenting, never giving up, thus the big plant pictured below is now the home of Beeware. All this has been made possible only by the highest type of honey producers who demanded the best of equipment and received in return craft-made supplies.

If you haven't yet used Beeware, write today for the free "Diamond Anniversary" catalog. You will want to try the special offers shown on both inside catalog covers right away.



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Camille Pierre Dadant, 1851-1938

C. P. DADANT, editor and publisher of this magazine since 1912, closed a long and busy life at his home in Hamilton, Illinois, on February 25, 1938, at the age of 86 years, 10 months and 19 days.

Although he had been in failing health for several months he continued to make an occasional visit to the office and was confined to his bed but a few days. Bronchitis followed by pneumonia was ascribed as the immediate cause of his death.

It has been given to few men to enjoy such close association with the development of an industry as Mr. Dadant had with the rise of commercial honey production. Most of the useful equipment so necessary to present day work in the apiary has been invented and improved during his lifetime and his wide travel and extensive correspondence has brought him into close personal contact with the men who have been leaders in beekeeping not only in America but in Europe as well.

It is but natural that those of us who have been closely associated with him in his work on this magazine for many years, have placed a high estimate on his contribution to the industry, to the advancement of which he gave constant attention throughout a long life. It will remain for others to measure the final estimate of his work but we who knew him so well cannot refrain from expressing the belief that few have done so much.

We who worked with him and under his direction came to know that he had a high appreciation of worthy accomplishment but no patience with pretense or sham. He was liberal in his views and patient toward those with a different viewpoint. He expressed without reserve his opinions but was unwilling to enter arguments which merely expressed differences of opinion. The first clear memory that this writer has of Mr. Dadant is concerning an argument over the large hive at a beekeepers' convention many years ago. He stated his position clearly and without room for question but when a younger and less experienced man took an opposite position he paid a compliment to his arguments without attempting to overthrow them. He was content to let the audience form its own conclusions as to the merits of the issue, while leaving no question as to his own opinion.

He set a high standard in everything which he attempted and gave close attention to details. He refused to consider any reduction of quality in any of his products to permit meeting competition. Those of us who were younger were impressed with his assurance that a meritorious product is the best sales argument. When we were inclined to be disturbed by the pressure of modern competition he would say "There is plenty for us all."

"Mineral Constituents of Honey—Phosphorous, Calcium, Magnesium"

This is the title of an article which has been reprinted from "Food Research," Vol. 2, No. 6, 1937, under the authorship of H. A. Schuette and D. J. Huenink of the Department of Chemistry, University of Wisconsin.

We give here the summary of the work done by these two, as follows:

"In the examination of 35 samples deemed to include representatives of most of the honeys produced commercially in the United States, it has been found that there apparently exists a qualitative relationship between degree of pigmentation, as revealed by the present-day practice of color-grading this food, and mineral content. With the exception of the element calcium, the values found for the dark honeys were definitely greater than those noted in the case of the lighter-colored varieties in respect to silica, phosphorus, and magnesium. Comparison of the data obtained has been made with those reported by others for honeys produced, in the main, on foreign soil. No such high concentrations of either phosphorus (336 parts per million) or of calcium (670 parts), as revealed in a compilation of the reports available in the literature, were found. In this instance the respective limits proved to be 23 to 58 and 5 to 266 part per million, in contrast to a 25-to-336 range for the former and the 41-to-670 variation for the latter. On the other hand, a new upper limit for the magnesium content of honey, of 126 parts per million, has been found, the heretofore existing maximum being 27 parts."

The reprint is technical, but those interested may obtain copies from the authors.



In preparing my equipment this year I have attached casters on the bottom of one of the bodies and pile eight or ten bodies on top of this one so I can roll them all at one time across to the other side of the honey house instead of having to carry them. This saves lots of steps, besides a lot of lifting and carrying. I got the idea from your writer from the island of Tahiti. I think he is a fine instructor and always read his articles.

E. D. Morgan,
Illinois.

Perhaps one of the principal reasons why sweet clover does not continue in favor in some localities is because it makes the ground so loose in any system of crop rotation including sweet clover that the seed bed cannot be compacted enough to get a good crop, especially for wheat. In some cases the ground is so loose it is almost impossible to plow it. It is not as important in other crops as it is with wheat.

L. R. Stewart,
Indiana.



G. J. Fifield, of California, sends us several pages of the Los Angeles Times describing the rainfall in California and to it he attaches a short item from the March 1938, number of American Bee Journal, page 107, in which C. B. Justice says, "We are needing rain badly in southern California."

Well, they got the rain! Shortly after this, they surely did have plenty of moisture. In one issue of the Times they print a total rainfall for cities of southern California in inches in the rain which they got on the 3rd of March. The highest was at Duarte with 16.62. Altadena had 15.52. All in the same day, mind you. From these high points, it ranged on down to half an inch. Three to six inches was common precipitation on this date. Eleven inches of rain was recorded from nine different points. Ten inches from a number of points. The loss of life and property toll in four counties was terrific. No doubt many bees were lost in this freak storm against whose devastation no foresight on the part of man could possibly have guarded either property or life.



On December 27th I found maples in full bloom here near Kenner, Louisiana. For two days the bees have been getting pollen in quantities, so doesn't it make you Yankees feel poor to know that maples are blooming and bees are humming way down South?

Frankly, I think this may cause worry for beekeepers in the deep South, because it is a long way to the end of March, when a honeyflow is assured, and most of our bees went into winter in poor condition. They are in no shape for brood rearing which may result following the cold spell and then stimulation of this early pollen followed again by cold snaps. Of course, flowering buds do seem good in the middle of Christmas week, but, watch out!

Jes Dalton,
Louisiana.

[That's the trouble! Early maple bloom often happens in the North too. In fact, more often than not. Then cold weather.—Ed.]

One who has worked under his direction with a large measure of freedom of action and has been permitted to make mistakes at his expense cannot but pay tribute to him as a considerate leader and a farseeing individual. When the country was engrossed in the post war boom and everybody thought that it was easy to get rich, Mr. Dadant constantly admonished caution and repeated an old world saying: "He who goes slowly goes safely and he who goes safely goes a long time."

At the age of 75, when so many are old and weary, our chief was doing his best work. It was then that he translated "Huber's New Observations on Bees" from the original French and for the first time placed a complete translation within reach of readers of English. He took the keenest of interest in every new development in the beekeeping field; enjoyed long visits with members of his staff and discussed at length the old and the new as it affected the progress of the honey producing industry.

Now that he has gone we are grateful for the years which we spent with him. He lived a long and useful life and his race was fully run. We can look forward with confidence to the better human society which he foresaw somewhere in the future and do our bit toward bringing it nearer. But long we will miss his coming and his daily salutation of "What's the news?"

ABJ

To Move or Not to Move

IT appears that there is an unusual unrest among beekeepers this spring. Many are seeking new pastures for their bees and some are considering long moves in the hope of finding better conditions. This is largely due to the series of dry years which have reduced the honey plants over a wide area.

Where there are no blossoms there can be no honey but in many cases there is a serious question whether the beekeeper is likely to find a location sufficiently good to justify the cost of making a change. If the honey plants are gone to such an extent that there remains no hope of a crop there is no choice but to make the best of the matter and search for a new location. In many cases, however, it is not so bad as that. There has been a reduction in the available forage because of long continued drought but enough pasture remains to offer a chance of at least a partial crop. Too often the extra honey fails to pay the expense of a long move.

It is very difficult to judge in advance as to the possibilities of a honey crop. Failure sometimes comes with every prospect most favorable, and good crops are sometimes harvested when everything indicates failure. When conditions are favorable for generous secretion of nectar, surprising yields are likely to be gathered from relatively small areas of bloom. At other times a wide expanse of bloom may yield but little.

The question of moving requires most careful consideration and investigation. It often happens that a new survey of the immediate neighborhood will reveal unsuspected bee pasture within a very few miles. In seasons of poor prospect it will pay well to make a most careful examination of the region for miles around in search of the best possible site for the apiary. Few beekeepers fully understand the nectar resources of the community in which they live. Until one has made sure that no pasture remains within

immediate reach, it is better to spend more time in a study of the local conditions than in seeking similar opportunity in far places. How much do you really know about the bee pasture within 20 miles of your present apiary sites?

ABJ

Personal Liability for Disease

A brief paragraph in the February Bee World is of more than passing interest. It refers to a case in Denmark where a beekeeper was held liable to pay compensation to two other beekeepers because he had brought foulbrood into the district and infected their apiaries.

This raises a point which probably has not yet been passed upon in American courts of law. If an injured beekeeper should bring suit for damages to cover loss sustained because of disease brought into the neighborhood by another, it seems probable that he might be able to recover.

If one man's cattle break into a neighbor's field and damage the crops he is liable for the resulting damage. If his car damages another's property he must pay the bill. In general, a man can be held responsible for the results of his actions and it would seem that if he carries foulbrood to another man's apiary he can be made to pay for the loss.

The difficulty in such a case would be in proving the source of the disease. If there had been no disease in the neighborhood previously, and the bees which he brought in were found to be diseased there might be a very good case established for holding a beekeeper responsible for the full amount of damages which resulted from disease in the new locality.

Some of these days such a case will come up in our American courts and if a precedent is established it will result in more care on the part of the beemen to make sure that no disease is moved to a disease free area.

ABJ

Fool Proof Recipes

A good suggestion from the Australasian Beekeeper, by Honey Lady, is to recommend recipes combining honey with sugar for cooking for those who are not accustomed to the use of honey. When used in such combination the novice is much more likely to succeed.

It is pointed out that one failure with honey is likely to result in the loss of a possible customer who will not try again. If success is assured at the start further experiment may result in the use of increased amounts in other combinations.

There has been much complaint of failure by those who have used honey recipes with which they were not familiar. A lack of understanding of the peculiar qualities of the product often results in disappointment when with slightly different technique a happy result might be obtained.

The presentation of fool proof recipes is a highly desirable objective for those who are catching the interest of the novice in the use of honey in the kitchen.

A five gallon square honey can makes a good wax mold and these cans are nearly always at hand.

But when the cake of wax is to be taken out, it is a little troublesome. To get it out easy, tie a wire round the can while the wax is hot. Then slip wedges between the wire and the sides of the can to depress the sides. Then, when the wax is cold, only the corners of the cake will bind slightly, which will not prevent the entire cake from coming out quite readily.

Frank Noel,
Pennsylvania.

That report in December about the wind charger killing bees becomes more than interesting if one walks under the eaves in time to receive a crippled bee down his neck. I know. We have a charger on the roof of our summer cottage in the Bristol hills, New York, where we also keep bees. I find the bees actually fight the blades of the charger and fly back and forth through them until killed. This only occurs during a break in the flow, however. During a steady flow, we have little trouble from this source.

Walter C. Christensen,
New York.

In order to stimulate the beekeeping industry of Nova Scotia, and to assist beekeepers generally, Hon. John A. McDonald, Minister of Agriculture, has announced that the Department of Agriculture is prepared to pay the transportation charges on packages of Italian bees from the South for the current year, if ordered through the provincial apiarist, H. G. Payne, Truro.

Arrangements have been made with a reliable producer in Alabama for these supplies to be shipped direct to purchasers. It is not recommended that bees be ordered for delivery after June 15, since after that date they do not build in time for the honeyflow. It is predicted that the demand for package bees this spring will be greater than the supply, and purchasers are urged to order early. Each order should be accompanied by money order. Until May 31, the rates are \$2.45 for a two-pound package with queen, and \$3.15 for a three-pound package with queen. After that date, the rates are \$1.95 and \$2.55 respectively.

(Copied from Canadian Bee Journal, March, 1938.)

American Honey Institute reports an average of 142 pieces of outgoing mail from its office per day during the months of February and March. This is heavier mailing than the Institute has previously had and indicates a continued lively interest in what the Institute has to offer the honey industry.



Home apiary last week of July, 1936, showing the fence which is used for a windbreak. The total number of bees in this and outyards is 460 Caucasian colonies. The 1936 white sweet clover honey crop was 22,000 pounds and the buckwheat crop 18,000 pounds.

Through the Year in Quebec

By Leo Traversy,

Quebec.

In my locality, the parish of St. Damase, county of St. Hyacinthe, province of Quebec, the soil is of clay where dandelion, white clover, sweet clover, alfalfa, and buckwheat do well. There are few trees and we have to protect our bee yards against winds by windbreaks of board fences seven feet high, which are a great protection against the chill of spring and autumn blasts. If these fences are not used, the yards are placed at the edge of a little wood where the bees go early in April to gather new pollen for colony development.

I take my bees out of the repository in the first part of April; at night to avoid exciting the bees and to prevent unseasonable flight and drifting—a trouble which unhappily, occurs too often when the bees are brought out into bright sunshine.

The day after the bees have been taken out, we clean the alighting boards and that same evening the colonies that are short of food are given 10 pounds of lukewarm syrup composed of two parts sugar and one part water. All this is done quietly without smoke, so queens will not be balled. The entrances are narrowed to about two inches.

About the fifteenth of May at the time of the dandelion, the first general examinations are made. Combs of brood are looked over one by one, for disease, and colonies which cover ten combs receive a super without a queen excluder, to allow the queen to go above and lay. A month later, this will be filled with young emerging bees. Needy colonies, extra short in stores, are also fed heavily.

On the twentieth of June, at the beginning of white clover bloom, all colonies with a super of brood are divided by taking away three combs of brood, a little honey and the old queen. The new division is placed on top over a double-screened ventilated bee escape board with a small opening in the frame of the board as an entrance. A young queen is then introduced in the lower brood chamber where the space occasioned by the removal of brood has been replaced by foundation or drawn comb.

On the brood chamber is placed a queen excluder and a super of dry combs, and on this a double-screen escape board, the opening of which has been closed by a cork. On top

of the escape board I place my new division with the old queen, with the small opening on the same side as the entrance to the lower colony.

I close this new division for two days so the bees will become acquainted with their new home, and then, they go at once to work. If one prefers, he can put in one or two queen cells in place of the old queen and it will serve as a queen-rearing nucleus. This new colony remains on the mother colony until buckwheat bloom, receiving heat from the bees of the colony below through the ventilated bee escape. It develops rapidly and is ready for the buckwheat flow.

The new colony may be moved to a new stand and the new queen raised in this division may be used to replace the old queen, without having to employ the introducing cage, since the bees have the same odor.

This method has three advantages: (1) easily controlled swarming, (2) renewing or raising queens, and (3) introducing a young queen without cages. In reality, it is a two queen colony during the white honey harvest, which may be divided or re-

united for the buckwheat flow, after having raised a young queen.

This method allows me to reduce swarming to 10 per cent. Swarming, having stopped at the end of the white honey harvest which occurs about the first week in August, is usually followed at once by buckwheat and red clover. The average harvest per colony per year is 100 to 125 pounds with Caucasian bees. I have a friend who has harvested as high as 180 pounds with Caucasian bees.

To take off the supers, I use bee escapes. I will try carbolic acid, about which I hear so much, but I have not yet done so. Four or five days after putting on the escapes, the supers are hauled to the extracting room. The shutters of the windows are closed with the exception of one window in which a screen is placed with two bee escapes in it to release any bees which may have remained in the supers. We heat the room to 80 degrees for two days in order to warm the honey in the supers. The supers are piled in the honey house crosswise. No bees are tolerated in the extracting room while the work is going on. Any robbers are killed at once.

The extracting outfit consists of an extractor with eight reversible baskets, a honey pump, an electric motor, steam-heated knives, a boiler, and twelve settling tanks each holding 2000 pounds. A cheese cloth is used on top of each tank and held in place by an iron hoop adjusted by a set screw. These serve as honey filters and strainers.

Ten days after extracting and after all the bubbles of air have risen, I put the honey in sixty-pound cans for export to Europe, or in five-pound pails for local trade. Buckwheat honey is placed largely in barrels of 750 pounds each and sold to bakeries. Usually the buckwheat harvest is over the last week in

September, and we begin to prepare the bees for winter.

I use the 10-frame Langstroth hives and if a colony weighs less than 70 pounds in fall, I feed it with warm syrup made with two parts of sugar and one part of water. This feeding should be done in the evening to avoid robbing.

For twelve years I have preferred to use Caucasian bees. They prepare themselves better for winter than Italians and they seldom have to be fed. Last fall, for instance, I used seven sacks of sugar for my 460 colonies for winter, whereas some of my friends used eighty sacks of sugar to feed 400 Italian colonies. This is the report in northern regions like Canada where the winter is long and severe.

The bees go into winter quarters about the fifteenth of November in a special building shown in the picture. A space of twenty inches between the outside and the inside wall, also in the ceiling, is filled with shavings. The floor is cement and slightly inclined towards the center for draining. The building is divided into two apartments, one as a winter repository and a front one for extracting. During the summer the two rooms are used as a laboratory. Two good ventilators and openings for air assure ventilation for winter. Two coats of lime cover the interior walls and give them a clean appearance.

—ABJ—

Comb Sterilization

By Frank H. Drexel,

Colorado.

(This is a discussion of the article in our January, 1938, number on the same subject in which experiments at the Dominion Experiment Farm at Brandon, Manitoba are mentioned. The experiments included the use of chlorine, alcohol formalin and water formalin in which Braun showed that it

The laboratory, wintering repository, and extracting house, as described in the article.



costs more to treat combs than it does to use new equipment. The results of the experiment are in a circular published by the Dominion Experimental Farm at Brandon, Manitoba, with the title "American Foulbrood and Sterilization Experiment".)

Mr. Braun may be entirely right in what he has to say about the efficiency of the sterilizing agents; but as to the cost of replacing combs, I think there is room for argument. If we simply say it costs as much or more to sterilize the combs than it does to buy new supplies, we may be safe. But if we go further and say it costs more to sterilize than it does to replace **finished combs**, then, I think, it is debatable. If we could buy finished combs on the market, or if we knew with some certainty what the bees will do each season, we might be able to figure the thing out better on a cost basis. There is little uniformity of opinion about the money value of a finished comb.

In our own case, we managed to get rid of foulbrood with Hutzelman's solution. If we had destroyed all the combs, we would have been hard put to it for both brood and surplus combs, because we went after the clean up with a vengeance. With thousands of colonies under suspicion and the seasons so undependable that wholesale replacements was almost prohibitive, the conditions are different than they would be in figuring out just the relative cost of the diseased equipment and new supplies.

After all, it is up to the beekeeper to act according to the conditions which confront him. Even experience gained in previous efforts must be ignored and new experience acquired each time. Getting nice foundation and putting it up in nice frames is one thing but getting it made into nice combs is another thing.

I think we should have some account of the experiences which others have in getting foundation drawn out from season to season. I would like to hear other readers tell about this subject which will give us some usable information.

If you have had experiences in an economical way to get drawn combs quickly one season with another from foundation, I think that is what Mr. Drexel has in mind. Let us have your experience.

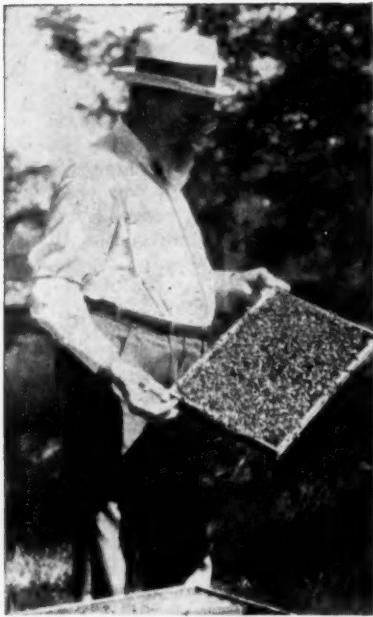
Our own experience with the different sterilizing agents Mr. Braun mentions is not satisfactory, entirely aside from the matter of cost. Too frequently, with poorly done work, recurrence brings all the trouble back on your hands again. Then, too, the physical condition of the combs with us has never been satisfactory. The bees take them reluctantly and they easily become damaged. These combs used from season to season are never seemingly as desirable to the bees as the nice new fresh combs are, so we have given up the use of a solution, because of this rather than the cost which is brought up in the discussion above.—Ed.]

—ABJ—

Mild in Washington

I have 90 stands of bees in good shape. This has been one of the mildest and most favorable winters we have ever had.

Howard Graff,



Camille Pierre Dadant

By Frank C. Pellett.

WHEN on February 25, death came to C. P. Dadant, it removed one of the last of the pioneers of early American beekeeping. It is hard for the younger generation to realize that commercial honey production has developed within the life span of the man who so recently departed from among us. He was personally familiar with the history of every important event in our industry and enjoyed the acquaintance of most of the men who were responsible for important contributions.

Born in Langres, France, April 6, 1851, Mr. Dadant spent his boyhood in the old city, where his father was engaged in the dry goods trade and later in the business of tanning leather. When changing conditions brought a railroad to that region it passed the old city at a distance of two miles and thus doomed its future growth. One after another of the business houses were forced to close because trade followed the rails.

Thus at forty-six Charles Dadant was faced with the necessity of starting life over again. He chose to come to America and arrived here in 1863. At that time Camille was twelve years of age, an active boy with all a boy's interests. Because youth is very adaptable and can readily learn new conditions he found himself burdened with responsibilities far beyond his years. The elder man found difficulty in making himself understood in the unfamiliar language and came to depend upon his young son, Camille, to transact all necessary business. It was the boy who marketed the fruit and the honey and bought the groceries and household necessities.

He once told the writer of vivid memories of standing before the store windows in admiration of such trifles as appealed to youngsters of

that age but not daring to spend the money to buy them because he must first pay for the flour for the family bread.

It was the pressure of necessity that made C. P. Dadant a man of business at an age when others were spending carefree days at fishing, swimming and playing ball. Because his father could not overcome the handicap of a strange language, the boy took over the handling of all family finance and by the time the elder Dadant was equal to the new problems, the family had become so accustomed to the arrangement that no change was made.

This early training in handling money and doing business had a large influence on C. P. Dadant's entire life and was in part responsible for his success. He had the advantage of good schooling up to the time of leaving France and had studied Latin and Greek in addition to the common branches. A boy of twelve, however, has not had time to proceed far toward a well rounded education. His peculiar situation in

the new home made it impossible for him to spend much time in school. Aside from a few brief periods during the winter months he was denied the opportunity of attending school in America.

His background was sufficient, however, to permit him to continue his own instruction with profit. To the end of his life he was an extensive reader and spent much time in his well ordered library.

When Charles Dadant brought home the first bees in box hives he said to his wife, "They will provide our living." Little did he realize the extent to which those bees would influence his life and his descendants to the fourth generation. The boy, Camille, was not interested in the bees. Several years were to pass before his responsibility was extended to include them. It was not until he was 18 years old that the elder Dadant became ill when the honey harvest was on and Camille was forced to turn his attention to the apiary. The season was good and the crop was large and from that



The cosmopolitan. Mr. Dadant (second from left) with A. Baldensperger, of Palestine (left); Leon Tombu, of Belgium (third from left); and A. Mayor, of Switzerland (at right).

day C. P. Dadant became an ardent beeeman.

From that time until the end of his long life the bees were his main interest and everything that he did was with a view of making the most of opportunity which the bees offered. He now became an active partner of his father in the apiary as well as in the orchard, garden and home. By that time the family had come to recognize the bees as a promising source of livelihood and the apiaries were expanded as fast as the limited resources would permit.

Charles Dadant was inclined to spend much time in experiment and observation at the time when the family needed immediate returns from his labor. Camille turned everything possible to practical account and thus relieved the pressure which economic necessity placed upon them.

In everything relating to the slowly developing industry of beekeeping father and son had a part. There were endless experiments with hives of all sizes, shapes and dimensions to determine the size best adapted to profitable use. Bees in large hives showed larger returns and convinced them of the superiority of large brood chambers. The original advocates of large hives, the family has remained consistent defenders.

When comb foundation was invented its value was at once recognized and father and son became interested in its manufacture. The first outfit was extremely crude. It consisted of a tub of melted wax in which a thin board was dipped. The thin sheet of wax which clung to the board was peeled off and run between the rolls to impress the wax with proper cell bases. With this outfit they were able to make 500 pounds of foundation during the entire first season.

At first they thought only of making foundation for use with their own bees, but neighbors soon asked them to make it for them also. Gradually the output expanded until a modern factory was the result and the product was shipped to far places on the other side of the world.

For many years Camille had direct personal charge of the bees and devoted much of his time during the summer months to them. Apiaries were widely scattered, roads were poor and horses and wagons furnished the only means of transportation. Thus long days were spent in apiary work.

Every new invention lightened the labor. Foundation removed the necessity of saving every bit of worker comb and piecing it together to provide straight combs for use in the hives. The extractor made it possible to remove the honey and return the combs to the bees to be

filled again. Smokers gave better control of the bees. It is only one who has been compelled to operate without these modern tools who can fully appreciate what they mean.

C. P. Dadant learned beekeeping from the beginning and knew from personal experience just what each step meant to the beekeeper.

Father and son soon became interested when Italian bees were imported. Charles made a trip to Europe to bring home stock of this race and many years were spent in importing and breeding Italian queens. Much of the present day stock is probably descended from the queens which they brought to America.

It was only after the death of the elder Dadant that Camille began writing much for publication. Charles had been a voluminous writer for many European bee magazines as well as for those in this country and his work was much in demand. Following in his footsteps, Camille wrote freely of their many experiences and continued to do so until recently when failing eyesight made literary effort difficult.

When Langstroth was no longer able to revise his book, "The Hive and Honeybee," he turned to Charles and Camille Dadant to do so. Through their efforts its influence was greatly enlarged and translations were published in Russia, France, Italy, and several other countries. The last important revision was made by C. P. Dadant in 1919.

"First Lessons in Beekeeping" and "Dadant System of Beekeeping" have been widely sold, and have introduced their author in thousands of homes. Mr. Dadant was also the author of several publications of lesser importance including "Apiculture" published by the republic of Mexico and the "Bee Primer," a little book for beginners. The translation of Huber's "New Observations on Bees" from the French was his last important literary work.

Among his most popular writings were accounts of two trips to visit the beekeepers of Europe which appeared in this magazine in 1900 and in 1913. His wide acquaintance and his familiarity with everything having to do with bees enabled him to provide a long series of letters of great interest to his readers.

During his lifetime he was elected to honorary membership in numerous organizations of beekeepers in several countries and to membership in other societies in America. King Albert of Belgium made him a Knight of the Order of the Crown in recognition of his work on behalf of the beekeepers in the devastated regions at the close of the World War.

As a member of the committee

having in charge the Miller Memorial, he had a part in the raising of the funds and the selection of the permanent location of the library which has already become one of the most important reference libraries relating to beekeeping.

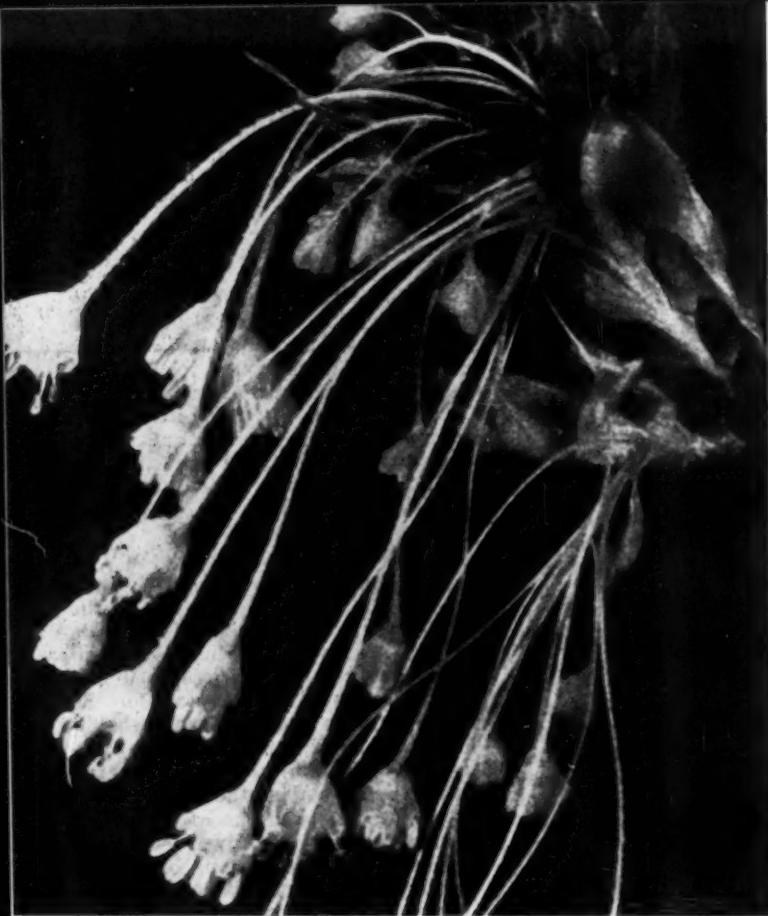
Mr. Dadant's work as a beekeeper is evident for it was his position in this field which made him widely known. His place in his home community was less conspicuous but he gave his attention to local affairs with the same attention to details that served him so well in his factory and his apiary. He was one of the organizers of the local bank and the building and loan association and served both as a director for many years.

Since the founding of the two towns on opposite sides of the Mississippi River at the foot of the rapids there had been talk of a dam across the stream. Numerous engineers had visited the proposed site and pronounced it impossible. So many surveys had been made that it came to be a common saying concerning difficult problems, "As impossible as to dam the Mississippi."

Mr. Dadant was one of those who believed that the river could be dammed and became one of a committee of five organized for the purpose. They formed a company and each subscribed five hundred dollars for stock. All the capital stock was expended in one more survey. This time they were fortunate in finding an engineer who thought that the river could be dammed and also who knew how to do it. Further he knew how to raise the twenty-six million necessary to do the job. Hugh L. Cooper was the engineer and the dam was built. At the time of its completion in 1912 it was the largest power dam in the world but since that time this same man, Cooper, has built other larger ones elsewhere.

Our readers are already quite familiar with Mr. Dadant's connection with this magazine through having followed him in its pages for years. He purchased the magazine in 1912 and gave it personal supervision until failing eyesight forced him to depend upon his staff to carry on.

Those of us who were long associated with him retain happy memories of many interesting occasions. He retained his keen interest in the bees and the magazine until failing health compelled him to lay aside all his work. He felt that his race was run, his work was finished and he looked forward to a welcome release, although he had but little physical pain. He was laid beside his parents in the family lot in the little cemetery in Hamilton where so many of his neighbors and friends have preceded him.



In Appreciation Of The Maple

By Edgar Abernethy,

North Carolina.



Her bloom welcomes spring and the paths by her side tell new things of a season yet to come.

TO all true lovers of trees, each species presents a definite and distinct personality. The robust masculinity of the oak, the slender feminine grace of the willow; the somber dignity of the pine: each is as evident and as characteristic as human personality.

Once our rolling Piedmont hills were clothed with a single unbroken forest. Today most of that virgin forest is gone, but there remains a great deal of wooded territory, comprising many kinds of trees. Several are of great importance to the bee-keeper. The poplar, or tulip tree, is our most dependable source of surplus. Almost as important in some areas is the sourwood, which yields a water-white honey of incomparable flavor and bouquet. Persimmon, locust, and holly add their bit to the total yield, while maple and willow are useful during the building-up period of early spring.

Besides these trees, which yield both nectar and pollen, there are many others which supply pollen alone. There is seldom, if ever, a day in springtime when ample supplies of pollen are not in the field, ready to be gathered.

Of all our trees, my favorite is the maple.

The maple is a lady, a comely and gracious lady. Her femininity is as clearly marked as the masculinity of the oak. Her feet firmly planted in

the earth, she lifts her boughs toward the skies with careless grace. She does not strive for rigid geometrical symmetry: her trunk is often gnarled and twisted; her branches grow in any direction her wayward fancy suggests. Yet the result is always harmonious and pleasing, she is always delightful to the eye.

My Lady Maple is not a snob. The stately pine stands aloof, his dark grandeur repels easy familiarity, we admire, but from a distance. The timid birch seems just a bit shy, we fear to frighten her by proffering friendship. Not so the maple, she is a friendly tree. There is neither pride nor fear in her heart.

And why should she fear? No hothouse plant, she; she is a lady, yes, but no delicate and pampered one. Icy blasts and leaden skies hold no terrors for her. Only the alder and the elm rival her in earliness of bloom.

We need no calendar to tell us when spring is near. While most other trees are still quiescent in their winter's sleep, the maple begins to rouse herself. Her buds swell, and redden; it is still winter, but she knows spring is near.

The days grow longer, and the sunshine brighter. Some warm afternoon we notice an unwanted bustle of activity among our bees. They tumble out of the hives pell-mell, and get in each other's way, as they hurry



back and forth, laden with nectar and greenish-yellow pollen. When we see this, and hear the cheerful hum which announces the honeyflow, we know the maples are in bloom, and another season has begun.

Nothing is more inspiring than to stand, on a balmy afternoon, beneath a maple in full bloom. Over our



THE MAPLE

Sentinel of the season; sharply outline against the winter sky; or by her firmly planted feet, sheltering the lovely flowers of spring; then, with yellow mantle and the beauty of the fall, she welcomes the rest of another winter.



By the banks of streams the early maples and willows give freedom to the laying queen with their plenteous pollen.

All too soon the pageant is ended. The flaming colors fade; leaves grow sere and brown, and flutter earthward; first one by one, then faster and faster, until every branch is bare, sharply outlined against the winter sky. Even thus, the maple is still lovely, still instinct with grace and beauty. The clinging snow, which beautifies the most ordinary tree, can only accent, not enhance, her loveliness.

Is it any wonder we love her? Not only does she furnish nectar for our bees earlier than any other tree, but all through the year she gives beauty.

It must have been a maple Joyce Kilmer had in mind when he wrote the lines,

"I think that I shall never see
A poem lovely as a tree."



Flighty Sez:

Gosh, I have an awful time with Ma. It just seems like she is always sore about something.

I was helping Lige Perkins haul his bees out of his bee cellars, and being as I am about Ma, and Lige being an agreeable old soul, I got his light truck to take Ma to our county beekeepers' meeting last Saturday.

I swept and scrubbed that old truck like nobody's business, knowing I was getting somewhere when Ma would ride in that sort of hack with me.

But Ma's mad again. How was I to know there was going to be a bee on the seat beside me?

ABJ

Hearing to Lower Attendant's Fare For Bee Shipments

A hearing will be held by the Consolidated Classification Committee on carriers' proposal to change the regulations governing the attendant's fare who accompanies carlot shipments of live bees. Heretofore, such attendants were required to pay full fare even though they traveled in the same car with the bees.

The present proposal changes this so that they must pay full adult railroad coach fare, making the ruling plainer and eliminating the possibility of such attendants being charged full first class fare.

No charge is contemplated in the regulation governing the waiver of liability by the attendant and which he is required to sign before purchasing his tickets to so accompany carload shipment of bees.

Those interested may arrange for representation at the hearing in person or by mail by addressing the Consolidated Classification Committee at the nearest office shown below:

Atlanta, Georgia, 101 Marietta Street; New York City, 143 Liberty Street; Chicago, Chicago Union Station.

Hearing will be held not later than April sixth next.

Circular on Honey

The Delaware Extension Service, of Newark, has issued an attractive folder, "Honey, Health and Economy," which offers numerous appetizing suggestions for the use of honey. This is the kind of thing which is most helpful to the beekeeper. Coming from a recognized source of authority, such a publication carries confidence to the reader.

ABJ

New Book on Plants And Pollen

"European Bee Plants and Their Pollen" is the title of a new book by Rev. M. Yate Allen. It is published by the Bee Kingdom of 60, Rue Menasce, Alexandria, Egypt.

This book is unlike anything elsewhere available and should serve a very useful purpose. There are brief notes concerning the plants as a source of honey but the main purpose of the book is to provide a means of identification of the pollen. It is profusely illustrated. A book of 150

pages contains 300 outline drawings showing the plant and a highly magnified pollen grain with a description of the peculiarities.

Some means of ascertaining the source of honey has long been needed and the identification of the pollen grains which it contains is the only one so far found. When we can say with certainty by what flower any given pollen sample has been produced the tracing of the source of honey becomes a simple matter to one familiar with the use of the microscope.

The author is pioneering in a new field and is worthy of great commendation for the work which he has done. To assist the worker with honey he makes a start at classification of different types of pollen and gives detailed description of the pollen from most of the important European honey plants. Since many of these are widely present in other countries also, the usefulness of the book is by no means confined to that region.

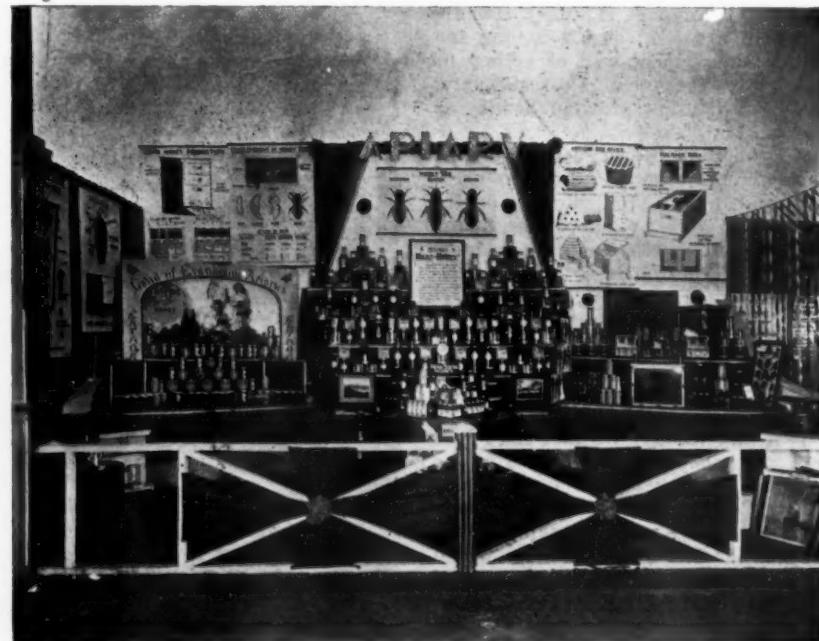
It is published in two editions, one in English and the other in Arabic. Cloth bound copies can be had from the publishers at \$2.50 per copy with postage extra. A paper bound edition is available at a lower price.

ABJ

Nova Scotia Educational Exhibit

H. G. Payne, Provincial Apiarist for the province of Nova Scotia, sends this picture of the educational exhibit at the Nova Scotia Provincial Exhibition held this present fall. The exhibit was contributed jointly by the Beekeepers' Association and the Di-

sion of Apiculture of the Nova Scotia Department of Agriculture. In reporting about it, Mr. Payne says, "We find that with this kind of publicity we can contact more consumers and producers of honey than in any other way."



My Queen Service

By L. T. Floyd,

Manitoba.

MUCH has been written regarding the matter of supersEDURE of queens in package bee shipments and much difference of opinion exists as to its cause and no very definite conclusions have been given that will solve the problem. In the position that I find myself, I not only must consider that problem, but also find the queen for that queenless colony.

According to the reports of the Canadian Customs, purchases of package bees and queens increased in value from \$16,000 in 1932 to approximately \$100,000 in 1937. Reports from beekeepers indicate that a third of the producers of honey in this province kill their bees in the fall and buy package bees in the following spring.

In districts where the crops are light and we have some such districts every year, the story generally heard runs like this, "If I had not killed them I would have had little honey to sell." In districts where the crop is good we hear them say, "I made good money this year so I thought I might as well kill them," so the bees are killed whether the crop is good or otherwise.

Success with package bees starts with 100% acceptance of the queens and diminishes as the percentage of supersEDURE increases. With the large producer it is generally considered better business to unite as soon as the queen is missed, giving the remaining bees to one of the weaker packages. The bees take care of this matter themselves to a certain extent, if not interfered with, but they generally select a strong colony for their new home where their presence is not needed.

In the case of the beekeeper with only one or two packages another queen is an urgent necessity and with some of the larger producers they are better satisfied to replace regardless of the honey crop results, so how to get a queen or queens quickly becomes my problem.

Certainly to write to the shipper who supplied the bees is not the best way. He is in the rush of shipping with a scarcity of queens all the time, or nearly so, and it is often three weeks before the replacements arrive. I pondered over this matter for years, each year the need became greater

until in 1936 I decided to take a chance and make a try. I buy the queens in quantities and sell them at cost. First I placed an order with three shippers for ten queens a day from each and had fairly regular deliveries. Appreciation was shown in an increasing demand as it became known that I could supply by return mail.

In this first year I began to learn as I increased my orders that the larger shippers were unable to keep them coming regularly. One day I would get what I expected, then two or three days without any, then some morning three days' shipments would come all at once. This was where I found it good business to buy from several shippers, the on and off days balanced fairly well, but it was still too much guess work. The intentions of the larger shippers were good when we exchanged letters in March, but hard to live up to in the May rush.

I sold nine hundred queens in 1936, beginning in April and ending around July 10th. In addition to purchasing from southern men direct, I did a lot of trading. There are cases where extra queens are ordered and then not needed. I made it known that I would take these and sell them and return later when needed, or pay for them. In 1937 I increased my orders and also the size of the orders and sold over 1500.

April, An Easy Month

April pretty well takes care of itself. The extra queens coming in package orders pretty well covers the need. The weather is too cool to examine and it is not until the beginning of May that the rush begins.

The month of May presents these difficulties. We may have three or four days of bad weather when no one can open a hive. I have three shipments on the road, these keep piling up on my desk with not a single order coming in. It does not do to become excited and stop shipments because any day the weather may change and all my stock clean up.

On one particular day I had one hundred and forty on my desk and I wired to stop shipping, but to my surprise I was sold out before night and had to wire again to start shipping.

Last year, a day or so before the price dropped I received double shipments from all shippers, and also learned that nearly every other buyer of packages and queens got the same, thus the province was flooded with queens and it took several days to get them cleaned up. My aim is to have them on my desk for all who call, write, wire or phone. I sell them at cost price and trust them to pay.

Cash Customers Get the Pick

Of course when they write and send the money I naturally fill these orders with what appears to be my best stock, and at once. I have no complaint regarding collections. I do not get it all at once, but it all comes in time. When you consider that in the months of May and June there may only be around thirty-five shipping days, these are busy ones for us.

Keeping Down the Death Rate

I have found it necessary to study methods of care of the surplus in order to keep down the death rate. Each morning I found it necessary to go to the office an hour early to sort over my stock. All dead attendants were removed and where attendants were reduced to three or less all these cages were placed to one side and carried home at lunch time. At home I had a wintered over colony on the sunny side of the garage and I spent most of my lunch period picking young worker bees from the combs and steering them into queen cages. I became quite expert in my selection. Newly hatched bees I found were useless, these would die in a few hours. The largest worker bees on the combs were my choice. I take it these are about twelve hours old. At this age they are busy feeding the young grubs and their bodies are full of food so that their wings distend, making them easy to catch.

With a little practice I was able to select workers that would accept the queen. If I made a miss the queens would at once emit a sound that could be easily heard. I then quickly grasped a tooth pick, that I kept within reach, and with the broad end of the tooth pick, crushed the offending worker through an aperture in the screen. Catching these

workers takes a lot of time. I have been advised that a quicker way would be to run as many workers of any age into the cage and then smoke them and lastly run the queen in among them, and there will be no fighting. I have not yet had a chance to try this plan.

Queens to which a dozen fresh workers have been introduced will live a long time. My losses were much smaller than I expected when holding stock. I find the desk in my office, where the building temperature is kept uniform, much better than to take them home with me. The stock is kept in a drawer, with the drawer closed, making it dark, and they generate heat enough to keep themselves above the room temperature.

Some Shippers Send Far Too Many Attendants

I found a great difference in the number of attendants sent by the different shippers. Some sent as many

as twenty-four, which in a three hole cage is far too many. A dozen seems to me to be plenty. The three hole cage gave me less loss than the six hole cage.

If anyone reading this article knows of a better way of caring for queens, I wish they would either write me or the American Bee Journal, as I want to learn more about this interesting work.

There is this little matter too that caused me trouble when shipments to any address from a number of shippers exceed \$25.00 in value they are taken to the Customs and a three per cent charge made. The remedy in this case is to have more than one address.

The experience of the last two years leads me to think there is room for a lot more people to rear package bees and queens in all that great southern country.

Southern Shippers Falling Down On Their Job.

It is becoming more and more

difficult to get packages and queens when we need them. I go down to the railway offices every morning in package shipping time and I see shipments coming in from every advertiser in bee journals, even though the advertisement is not more than two lines. In fact after some one, hunting for packages, has tried two or three of the big shippers and finds them unable to ship, they choose the little fellow as a surer bet. One thing is sure, we need more bees and queens than are now available at the source of supply.

I am getting more and more reports that say—"We have no bees this year as all the shippers sent back our money. Our equipment is idle for this season."

The queens however are my biggest problem. I hope to handle about twenty-five hundred next spring if I can get them.

ABJ

Heating Honey

By E. L. Sechrist,

Tahiti.

This is an important subject and one to which we do not, as yet, have a full answer. The best that can be said at this time is that honey should never be heated unless it is necessary, and that then it should be heated as little as will give the desired results; that it should be heated quickly and cooled again as soon as possible.

It appears to be a fact that most honeys can be heated to 140 degrees F. or even considerably higher, in small quantities, and cooled to about 90 F. within an hour, without injury to color or flavor or quality that is noticeable. It is also a fact that most honey that is heated is not handled in that way, and is, consequently, damaged more or less. It also seems a fact that honey heated a second time is damaged more easily than the first time, therefore it may be assumed that some change, not readily detectable occurs during the first heating.

If the producer heats honey at all, it should only be enough to facilitate handling, unless he is also a bottler preparing honey for retail trade or desires to heat honey previous to pro-

cessing it for controlled crystallization.

In any heating of honey, care is needed to heat the whole of it evenly, and not to bring the mass of honey up to the proper temperature by heating a small portion of it excessively as is done all too often when honey is run through a steam jacketed pipe or when a steam coil is used in the bottom of the extractor. Although honey can be warmed safely in many ways while extracting, the fact remains that only a few operators are sufficiently careful in shutting down the heat supply when only a small amount of honey is passing through the apparatus. The care required is seldom humanly possible and any thermostatic arrangement is likely to be expensive or complex. In all extracting operations the flow of honey is irregular and unless the heating surface over which the honey must pass is large and only moderately hot, successful heating is not attained.

There seems to be no way of warming honey which is so practical as to use an extractor with a water-jacket of 1½ inches or more. In

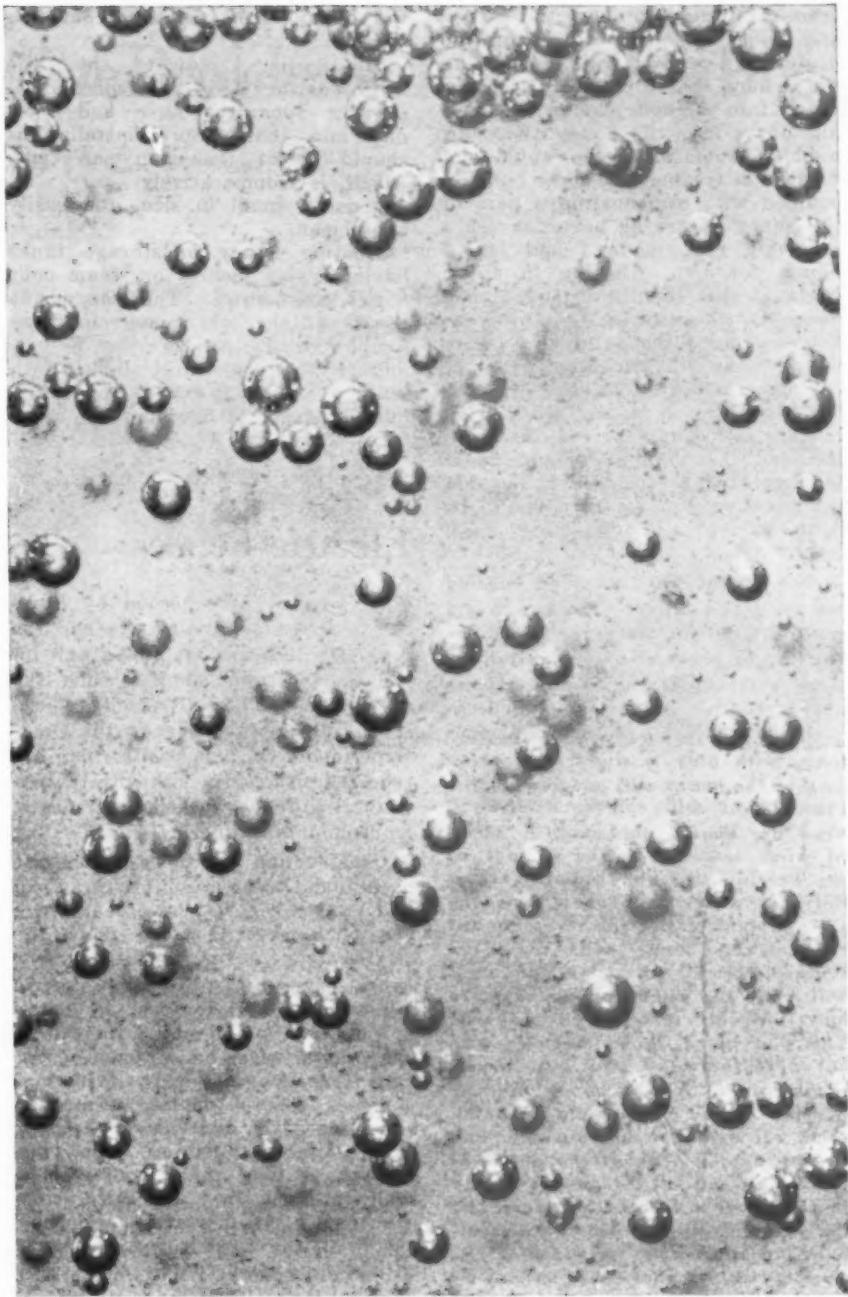
Honey Getting

SECTION II

Part X

this method the thin film of warmed honey runs off the heated surface immediately and into the outlet pipe and strainer or separating tanks. If this warmed honey is then run into storage tanks in a warm room where it will remain at about 90 F. overnight, the honey should be in excellent condition for capping in 24 hours.

Because of the difficulties in placing a waterjacket on the outside of an extractor the plan has been devised of coiling 100 feet or more of about one-eighth inch inside diameter copper pipe, preferably tinned outside, on the inside of the extractor wall, fastening it in a number of places with solder. Through this pipe steam is passed. It is a very satisfactory substitute for a water-



Heating honey drives off the air bubbles. This photo, taken by William M. Harlow, of New York State, shows just how these undesirables look when they are rising through the honey.

jacketed extractor, and heats the honey more evenly than does a one inch steam coil lying on or immediately beneath the bottom of the extractor.

Heating filled extracting combs in a warm room seems to be a perfectly safe method if so much heat is not applied that the surface wax becomes soft before the honey is warmed through. The temperature of the warming room should not exceed 100 degrees F., and the warmth should be well distributed.

When heating honey in any way, a good thermometer should be in

constant use. Guesses on temperature are not safe when heating honey.

All honey which is heated to over 100 degrees should be cooled as quickly as possible and should not remain in a large tank while cooling. Honey heated to 140 degrees and then run into bottles while hot will be injured if these containers are boxed and stacked up in a mass before cooling.

The use of a warm room for storing honey has advantages, but also dangers. A 90 degree room used with care, is excellent, but if hot honey (heated to above 100 degrees) is run into this room and kept there

a long time, it will be damaged. It is well known that a large tank full of honey heated to the bottling temperature of 140 to 160 degrees will darken perceptibly between the time the first can is drawn off and the time of filling the last can, even if the work is done quickly.

The tendency is to use steam when heating honey, instead of hot water, because it is more convenient. Hot water, however, is safer, particularly in the hands of an operator who is not extremely painstaking.

If honey is not warmed by a water-jacketed extractor, another favorite way is to run it through a steam jacketed pipe. It is better, however, to run the honey through a jacket around a steam pipe because, in this way, all the heat from the steam is applied to the honey, and because the honey nearest the steam pipe becomes heated and flows away readily leaving the less heated honey in the jacket while, if the honey pipe is inside, the film of heated honey next the steam pipe acts as a lubricant, permitting the colder honey in the center of the pipe to pass through without being evenly heated. A two-inch pipe, about six feet long, jacketed with a four-inch pipe through which the honey flows, is commonly used in this way. The pipe joints may best be made by welding.

This heater pipe should be almost horizontal but with a slight downward slope away from the extractor. It is desirable to have a valve at the honey inlet to the heater, so that the flow of honey through it may be controlled to regulate the temperature to which the honey is heated. At the lower end of the heater, the outlet which is a gooseneck of pipe fittings and nipples, should be arranged so that, when turned upwards, it will keep the whole length of the heater-pipe full of honey. Whenever there is heat in this pipe it is necessary that it be kept full of honey and the honey flowing, otherwise the honey will be damaged, as in any other case where a thin film of honey is exposed to steam heat. This gooseneck may be turned downward to drain the pipe at the end of extracting. It is well, in fact necessary, to place a thermometer in the outlet pipe from the heater so that the temperature may be observed at any time. If in a dark place, an electric light should be situated so as to illuminate it. Unless a thermometer is thus permanently installed at a point where it can be seen readily by the operator, it is quite certain that the temperature to which the honey is heated will not be uniform. The temperature in this form of heater is easily regulated by opening or closing the valve admitting honey to it, as well as by regulating the amount of steam passing into the heater pipe. All such installations requiring attention

should be placed within easy view of, and as near as possible to the responsible operator.

This heater may be used anywhere in the line between the extractor and the bottling tank but is usually used to bring the honey up to a straining or clarifying temperature after it has been somewhat heated by the coil in the extractor which, owing to the irregular flow of honey through the extractor, cannot be depended on to heat the honey to any exact temperature. Yet a coil in an extractor or a water-jacketed extractor does usually heat honey sufficiently for clarifying.

Another good arrangement for heating honey as it comes from the extractor is a hot water-jacketed strainer box which will be described under the heading, Honey Strainers.

A long, open trough with a water-jacketed bottom is used by some instead of a jacketed pipe. Such a box should be about twelve feet long by six or eight inches wide and at least four inches deep. The bottom of this box, over which the honey flows, is preferably slightly corrugated, the corrugations not being more than one-fourth inch deep. These corrugations help to distribute the honey in a thin layer over the bottom of the box so that it is warmed gradually as it flows. The water may be heated by steam or by an oil stove, or in any convenient way.

Heating honey can be done readily, on a small scale, as when bottling honey for home trade, by using a small extractor tank. By removing the baskets from the revolving reel and fitting narrow paddles of wood to the vertical members of the reel, and revolving it very slowly, good results are achieved. One instance of the use of this may be given. A small extractor tank had been jacketed for steam. It was filled with honey and steam admitted into the jacket. Before the reel began revolving, steam was passing into the jacket and free steam was escaping from the outlet. Immediately when the reel began to revolve, steam ceased to issue from the outlet and condensed water dripped out, indicating that the movement of honey caused by the revolving reel exposed so much more cold honey to the heated surface as to take the heat from the steam and cause it to condense.

If enough care is used, such an apparatus will give good results, but it does require care. The operator just mentioned, when beginning to heat honey in this way, spoiled his honey for bottling by heating it irregularly and by filling it full of innumerable small air bubbles, some of which rose to the top of his bottles as foam, the rest remaining in the honey to make it cloudy. He did this at the last part of the process by permitting the honey to run freely

from a storage tank to the heater and again, without a baffle, from the heater to a settling tank, permitting the honey to drop freely from a height into the honey below it, carrying down into the honey those air bubbles from which he could not succeed in freeing it. These bubbles, coupled with over-heating a part of the honey before he began to use a revolving reel, made a bad lot of honey for him. Putting in a tin baffle so that the honey had to run down the side wall of the tank without dropping directly into the honey below made it possible for him to heat his honey to 140 degrees or more and to have it free from bubbles. It cannot be too often emphasized that bubbles should never be permitted to form in honey and that heating above 90 F. should be done quickly and the honey then cooled quickly.

One of the best ways of heating honey, either directly from the extractor or from settling tanks for bottling or processing for crystallization, is to run it, in a small stream, over a heating pan two inches deep, perhaps two feet wide and four feet long, with only a slight inclination so that the honey will not flow off too rapidly but will spread itself well over the heated surface. A series of wires soldered to the surface of the heating pan and radiating from the spot where the honey from the storage tank falls will serve to distribute the honey well over the surface. Small corrugated channels will serve the same purpose, but are more difficult to arrange properly. This pan has a double bottom, with hot water between, and some means for heating. As the honey falls on this hot pan, it spreads out in a thin sheet all over the hot surface, and by the time it reaches the outlet at the lower end of the pan, where a thermometer is located, is warmed to the desired temperature. The heating is regulated by the size of the stream coming from the tank and by the slope of the pan as well as by the temperature of the water. The heater works very rapidly and satisfactorily, exposing the honey to heat the minimum amount of time, which is very important. Following heating in this pan, the honey is strained, settled, or bottled, as may be desired, and cooled as quickly as possible.

Honey may be heated safely by this method, being exposed to heat for only a few minutes, and reaching the highest temperature only a few seconds before it runs off the hot pan, then to be cooled quickly. The cost of the open pan heating system is within the reach of any beekeeper and its successful operation is comparatively simple; moreover it is safer than heating honey in a costly jacketed tank with some kind of stirring apparatus, principally because

the honey is heated and cooled so quickly.

Observations indicate that the large heating tanks with mechanical stirring apparatus have had their day and that future installations should be of the open pan type, which is comparatively safe, inexpensive, small in size, and easily kept clean.

Heating honey in storage tanks having water jackets or steam coils is not satisfactory. The mass is too great and the cold honey circulates too slowly. It may, however, be permissible to warm honey slightly in a tank to facilitate straining or settling, but this needs to be done with great care.

ABJ

Electric Fences

In localities frequented by bears the beekeepers have always had the problem of Bruin, but now a new invention has come along to solve the problem. Mr. G. H. Vansell, federal specialist in bee culture at the Davis Experiment Station, California, has reported on experiments with the use of electric fences to keep bears away from mountain apiaries.

Construction of such fences has been found to be absolutely practical and Vansell reports that a bear which has been shocked once from the electric fence never returns.

The construction of the electric fence varies slightly from an installation for other animals. Instead of one or two wires as is usually the case, three or four wires is recommended. These should be barbed wires spaced at intervals so the bear cannot crawl under or jump over without making good contact. In some cases the first and third wires are placed on insulators and connected to the electric fence charger with second and fourth wires connected to the ground. In other installations, especially in extremely dry areas, it has been considered wise to place all four wires on insulators and lay a strip of old chicken wire on the ground at the base of the fence so that Mr. Bear will be sure and make good contact.

Electric fences are usually run by batteries in such cases since other current is seldom available. Good controllers which can be depended upon to guard against Bruin can be had for from \$18.00 to \$35.00 and the cost about 3 cents a day to operate.

Apiarist in southern Idaho are also finding the electric fence an economical way of guarding the apiary against intruders.

Fred F. Richards,
Idaho.

The Problem of Watering Bees

By H. E. Weisner,

Arizona.

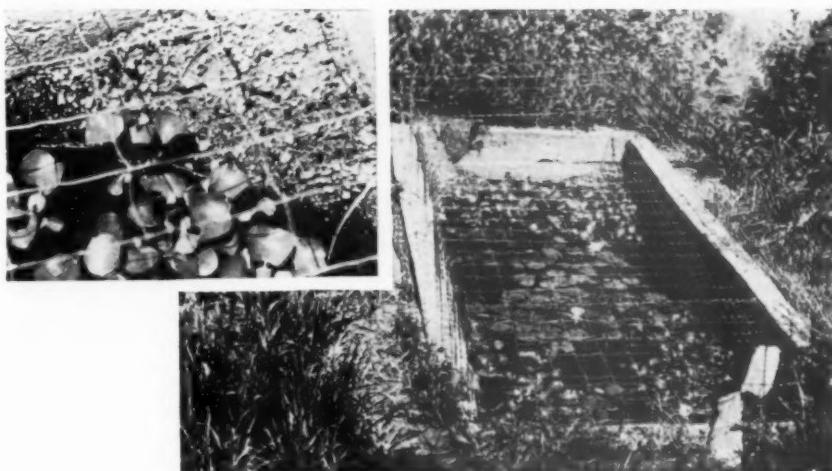


Photo by O. W. Park at the Atlantic Station, shows how Frank Pellett solved the water problem. A cement tank, with gravel bed, water from the windmill, chicken wire top and fence, water plants and fish to keep the water clear.

OCCASIONALLY there are inquiries published in the bee journals regarding some means of preventing bees from becoming a nuisance in their efforts to obtain water, and there is nothing remarkable about this, as many a beekeeper has been confronted with this serious problem. Of course, bees must have water, so the first consideration should be to furnish them a steady supply where they can cause no annoyance.

Often bees have water easily accessible, in a location where their constant presence could cause no disturbance. Yet they persist in obtaining their water from watering places used by stock or poultry, refusing to stay where they belong. For many years it has been my custom to supply water to the wild birds living in the vicinity of my home, and although water was provided for the bees as well, they did not respect the wishes of either the birds or myself, and often during the hottest and driest part of the year they would come to the birds' watering places in such numbers that only one or two of the most courageous varieties of the birds dared approach.

I tried several schemes to remedy the situation. One was a downward sloping flange of sheet metal all the way around the rim of a rectangular shallow pan. That helped some, but more and more bees learned the knack of squirming over the edge of the flange and making their way to the wall of the pan. Next I tried swabbing the rims with crude car-

bolic acid, but the birds seemed to object to that almost as much as did the bees, probably because some of the stuff got into the water and tainted it. In desperation, I tried applying waste machine oil to the sides of the pans, some of it getting into the water of course, forming a light film on the surface, which the birds did not seem to dislike over much, although it no doubt spoiled the water for bathing purposes.

For the bees, however, it was intolerable. It seems that in attempting to drink from water on which there is an oil film, be it ever so thin, a bee gets an oil film on its tongue that renders it temporarily unfit for sucking up water, so it soon gives up trying. There was some loss of bees, for if one happens to fall into the water so treated it is doomed, as the oil spreads over its entire body and it quickly succumbs.

To make the water less objectionable to the birds I now use the colorless and tasteless mineral oil that is so much used by bakers and candy makers for oiling the vessels and bake pans, a more refined grade of which is sold for medicinal purposes under various trade names. This type of oil is, of course, much to be preferred where domestic animals use the water, and perhaps the best way to apply it would be with a small sprayer.

In this part of the country bees use so much water during the periods of combined heat and drought that provision should be made accordingly. The maximum amount is about

one quart per colony per day, and the watering basin I have built for my bees here at my home yard is five and a half feet square, which is barely large enough. If a larger one is built, it should be longer, rather than wider; for the bees become too crowded for proper flying space. There are now about 180 colonies in the apiary.

One of my neighbors has a similar watering basin near an isolated ranch house, and the bees have not caused the occupants of the ranch any annoyance during the several years since its installation.

My basin is five and a half inches deep, is filled with gravel and coarse sand level with the top and is supplied with water piped from a tank. To maintain a constant water level a float valve is necessary. This is placed in a chamber made from a three gallon pail, the sides perforated and the supply pipe entering about half way between the top and bottom, the top being closely covered with window screen to exclude insects or anything that might pollute the water or interfere with the proper operation of the valve.

Concrete seems to be the most satisfactory materials for watering basins, although heavy sheet metal might be preferable in cases where it might be necessary to move them. If possible, they should be located where they are sheltered from the wind.

ABJ

Bee Hunter's Paradise

The region described by Purchas in the following would seem to be the original bee hunter's paradise.

"The country of Matkofiet, 372 German miles from the City of Assumption in the River Plate (near Peru) is so abundant in bees that you shall scarce open any tree with a hatchet, where will not run out five or six measures of pure honey; the bees that make it are very little, and without stings."

Farther up in the country, he says, there are two chief sorts of bees that do not sting. "They have honey in abundance, and the farther up in the Country the more plenty. I have seen more taken out of a tree at a time than a firkin will hold, as clear as running water."

W. H. Hull,
Virginia.

ABJ

One Mistake

I have nineteen colonies of bees, some wintered outside and a few in the basement. I made the mistake of putting a screen or cage in front of a few strong hives and they clogged the entrance and died, so I will not do that again. J. O. Bergstrom, Minnesota.



A modern truck load of bees going to the yards. In British Columbia.

Our Experience With Package Bees

By Hy. W. Sanders,

Manitoba.

DURING the past few years, my neighbor, W. L. Pink, and I have handled many thousands of packages. In April (this is written in January) we expect to start south with our trucks, he to Alabama, and I to Texas, for 1250 packages. We still argue sometimes about the desirability of wintering vs. packages, but whatever the academic arguments for wintering, the practical convenience of the packages has so far won out that this year we have not wintered any. We share the same home yard, and work cooperatively in many ways, and some account of our experiments and experiences with the packages may be useful to others.

The date at which to start colonies with the packages is a most important matter. Too early a start means that there will be a serious drain on the vitality of the bees before they really get going. Too late a start will not allow the bees to build up to honey gathering strength before the flush production in sweet clover begins. In this district the latter point is important because the farmers nearly all use tractors and except for seed patches the clover is all plowed as soon as it is cut, about the middle of July. We get a tremendous flow from the last few days of June until the binders get to

work, so it is not as bad as it sounds, and there is sufficient clover in ditches and on roadsides to give us a secondary flow later, but the bulk of our crop comes along in the early part of the season. Hence late packages usually fail to make the grade.

We have found that the southern breeders are slow to grasp the extreme importance of a few days. Not all of them, of course, nor are there as many now as a few years ago. But some seasons we have had late bees, despite telegrams expressed in frantic terms, and we are convinced that in some cases the shippers just could not bring themselves to believe that a week or two was so desperately important. Of course there are sometimes other causes. Raising bees and queens in a business dependent on the weather, and there may be conditions in the South that are altogether beyond the shippers' control. Also we think that some shippers are less cautious than they might be in accepting orders. It is human nature to be optimistic about the weather and hard to turn down cash business. However, by and large, we have had wonderfully good service from our friends in the South, and it is improving from year to year. Since we have been going south ourselves with trucks we have had no delays, and we have a feeling that

the trucker gets first service in case of a squeeze. There he is, right at the door, and waiting to be gone, so he gets his bees. This is an argument for truck shipments that is not always considered.

There is a little difference of opinion as to exact date for starting bees. **Our own thought on the matter is that the first week in May is about right.** April bees have to worry along through a number of cold nights, without any nectar or pollen, and they have to get water in weather that is proverbially changeable and may turn to cold and snow any minute. Most years our first honey from willows is available by May 5 to 10 and then we have a continual flow through dandelion to mustard and clover. So we aim to get our bees installed just as soon after May 1st as we can. By the time they have released the queens and got down to business the first forage is here.

There have been some articles in the bee journals about truck shipments that have been brought up without feeders. We tried it and had a heavy loss. Another man we know tried it and got away with it once, though he had to stop and unload his bees and feed them, then reload, which delayed him several hours, used up several hundred pounds of

sugar, and made a lot of work. The second season he tried it again and lost half his bees through being caught in a cold storm. So we both believe in the feed cans, with the bees fed some syrup on the cages at time of shipment as well, for good measure. Last spring we had a tremendous cold storm with heavy snow as we were on our way up—or to be exact one truck was here and the other one on the road. In both cases the bees were placed in warm buildings for two days, before the weather moderated, and losses were insignificant. If we had depended on emergency feeding we would have lost plenty.

We have found that the trucks must have good tight bodies. We use boxes of lumber with cardboard from cartons nailed over the insides for warmth and double canvases over the top. The start is made late at night and we leave the bees uncovered to cool off during the first few hours of driving, and if the weather in the South should be quite warm, we may even run the first day with the top open. But wind is not good for bees and we have lost more by exposure than by too much protection, so the canvases go on before we are very far on the long road north. Perhaps some day we will evolve a proper system of ventilation. So far we have succeeded without anything more elaborate than frequent inspections and adjustment of the canvas covers.

To handle hundreds of packages on arrival takes some organization and we arrange to have extra men hired and ready when we arrive. The first job is to unload all the bees into a building. If the day is chilly, the stove is lighted and the temperature raised to 65 or 70. Each crate of packages is turned on end over a bathtub of syrup and a cupful is poured right down through the screens on the bees, so as to give them some preliminary refreshment. However, in case any of the packages looks to be in bad condition, this feeding would be too drastic. Occasionally the holes in the feed can have been made too small so that the bees have not been able to get the food, or too large so that it

leaked out, or in rare cases the entire can may have been put in upside down or not filled. These packages arrive in poor condition, but if not actually dead, can often be nursed back to life. We look carefully over each crate and pick out any such. Feed is carefully brushed on the wire and they are placed in a warm place. If not too far gone the bees will soon be licking up the feed and more can be given. In such cases it is best to coddle them along for a couple of days. However, most of the packages arrive strong and well, with only perhaps a dozen dead bees on the floor and the rest hanging in a nice tight cluster around the queen cage. Momentarily they are disorganized by the flow of warm syrup through the cage, but in an hour or two they will be all licked clean and feeling satisfied, and by that time we shall be ready to shake.

While this preliminary feeding is going on some of the helpers have started putting out hives. In the storehouse these are provided with six combs each, containing enough honey to approximate ten pounds. This work is in the hands of our most experienced men as it is very important to see that every colony is properly provided, and that the honey is located in the center of the hive, where the bees can get to work on it without delay. We have had cases where bees starved because the honey was all on the far side, and owing to a quick change of temperature the evening of the day when they were shaken, they never reached it. Much of the honey kept over from the previous fall will be granulated solid, but it does just as well. We have had no cases where the use of this granulated honey seemed to produce any bad effects.

To shake we work in gangs of three. One helper pries up the cover of the package and loosens the feed can. The chief operator comes next and quickly shakes the bees into the space of the hive left by the absence of four combs. He inspects the queen cage to see if she is alive, and then arranges for the release of the queen as hereinafter described. The second helper covers the combs with the

burlap mat and covers the hive. If the temperature should be warm enough to tempt the bees to fly, he also stuffs the entrance with grass. Of course the regular hive entrance is closed down to an inch or less. Working several gangs as described, the bees go into the hives at a great speed and in a few hours a truck-load of 500 or 600 packages are all hived.

The release of the queen has been a problem. At first we followed instructions and hung the cage from a tack, or placed it between combs, leaving the bees to release the queen in the orthodox way. But one spring it turned cold in the night, and we lost a lot of queens by chilling. The next thing we tried was to pour a little syrup over the queen cage, then to release the queen among the bees at once. That worked pretty well, and later we would just pour on syrup, rip off the screen and throw the cage down among the bees. The percentage of loss by this plan was very small and in most cases the combs had new eggs in them next day. However it looked like pretty rough treatment for a queen and we did not like it. Now our plan, which we like better than anything we have tried as yet, is to take a big nail, run it through the candy so as to make a hole nearly big enough for the queen to pass, then stand the cage on its end, leaning against the outer comb, the aperture upwards. As it is right in the middle of the mass of bees there is no chance of chilling. Within a few hours the bees will have the hole enlarged so the queen emerges, and as she always tries to walk upwards, the aperture is pointing in the right direction. We do not smear her with syrup with the possibility of half smothering her by obstruction of the breathing apertures. Use over two seasons has shown practically 100% success, with new eggs in the combs in 24 hours.

We have found in some cases that the queen in the cage was dead from neglect because by some chance a laying queen, or even a virgin, had gotten into the cluster in the package. So when we find a dead queen in cage we put a marker on the hive, shake the bees as usual, and wait a day or so. If they are seen to be queenless we give them a queen from some spares that have come on by mail. As this queen has not been with the bees in the package on the journey we do not provide for immediate release but leave enough candy to delay same for two or three days.

Last season Mr. Pink had a number of such queens in his shipment, and he noticed that in those hives the bees seemed to build up faster and better than in the others. So he is arranging with his shipper to send a large number of packages with the queen belonging to the bees, loose



Northern buyers come with trucks to carry a potential gathering force home that may run up totals of many thousand pounds at the end of the crop.

in the package. He thinks it may be a remedy for the supersedure that always constituted the big problem.

After shaking, the bees are left alone for several days. Then we begin our regular inspections, and then, alas, queens begin to disappear. We lost from 10 to 20% between the time of shaking and the time when colonies move to the outyards at the end of May. The queen starts laying in good order, and then disappears. In an article in the "American Bee Journal" a year or two ago I discussed this problem, and there is not much more I can add to what I then wrote. The remedy seems to be divided between those who would add young bees to the package a week after hiving, and those who believe that the cause of supersedure is in the queen herself. We have not felt that addition of extra bees is a solution because bees do not ship well without a queen, and in a large apiary the provision of enough extra bees at the right time would be a great expense with a very uncertain advantage. Practically what we do is to have plenty of extra queens coming along every few days, and in the first instance to get enough additional packages so that after perhaps a 5% dropout there will still be enough to provide the required number of producing colonies.

A few days after shaking we go the round with additional combs and add three more to each colony. This makes nine, and the tenth comb is not given until the bees begin to spread throughout the hive several weeks later. By using only nine combs it is very easy to go through the hive. These are, of course, not spaced equally across the hive but crowded together. To inspect for queenrightness it is only a moment's work to lift the cover, blow a little smoke on the bees, and separate the combs with the fingers until the center ones can be inspected. Eggs and young brood tell the story.

There are two experiments I would like to try. Perhaps someone else has tried them. One is to get package bees early in April, and hive them in the cellar, keeping them just like cellar wintered bees until settled warm weather. One could shake them and arrange for queen release just as we do now, and if placed in the dark the bees would not need to be confined to the hive. If this process were successful it might give us colonies with emerging brood by the time we now start our packages.

The other experiment is less radical. It is to make tight division boards so that we could hive two packages in each hive, with entrances at right and left corners of the front of the hive. The bees would tend to keep one another warm, and when the colonies began to multiply they could easily be transferred into a pair of hives standing side by side with

entrances contracted so that the bees would readily find their own. The plan has the additional advantage of saving equipment, for there are always tops and bottoms that go out on the first of May and come back to store within two or three weeks until the following spring.

—ABJ—

1937 in Idaho

While this was a poor year, one of the worst I ever saw here, the bees kept in much better shape all through the summer than they did in 1935 and we had a light flow until September 23. The queens laid into October so we have a pretty good stock of young bees and plenty of stores to go through until we unpack. Then they will all be taken to the mountains where they usually get about what they use for two or three weeks when the buckbrush will come on and they begin to store about May 10th. Have enough feed on hand to

stock up any colonies that might run short.

Since October 1st we have had nearly nine inches of rainfall over the Boise National Forest and nearly as much all over the desert. This is almost as much as we have had for a year in several recent years. In fact it is three-quarters of all we have had since January 1st, 1937. It has been raining, however, up to about 7000 ft. Above that it has been mostly snow. Recently about a foot of snow fell as low as 5000 feet. It has been very warm and the bees carried pollen until December 1st. Were still a few dandelions blooming on December 17.

It looks as though we would have enough moisture for crop and the bees should be in shape if the spring is at all favorable. But all of this availeth nothing if there is no nectar like it was this past season so only time holds that answer.

Roy Rabbitt,
Idaho.

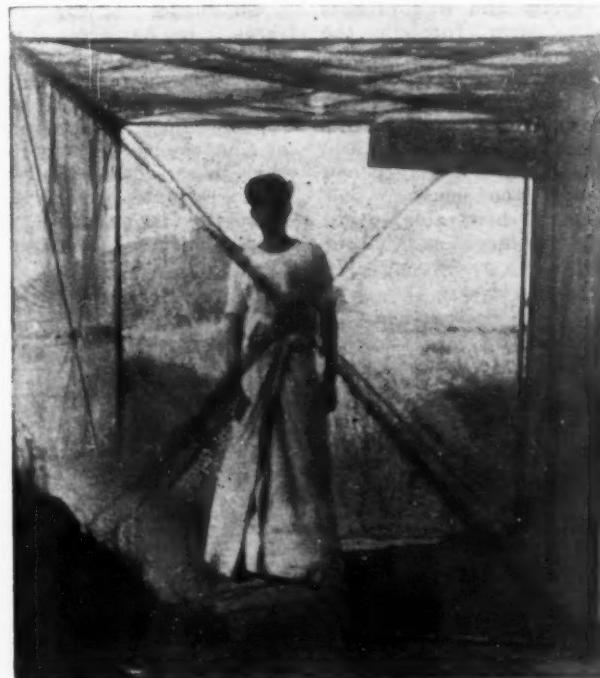
—ABJ—

The Bee Shelter of Sigiriya

THE fortress of Sigiriya in Ceylon crowns the top of a precipitous hill, the approach to it being by way of a narrow causeway cut in the face of the rock. The crevices of the rock walls are inhabited by swarms of wild bees which have a way of attacking intruders, which they have often done with fatal results. To pro-

vide travelers with some means of defence bundles of straw are deposited at intervals along the ascent and at one particularly dangerous spot the shelter shown in the accompanying photograph has been built as a refuge in emergency.

Ronald Sinclair, F.R.G.S.,
England.



In the Netherlands

I SEND you picture of my bees in winter quarters. The picture was taken on the 10th of April with daffodils in bloom. In the picture is a group of mating boxes which wintered in the open air with American queens and a good cluster of about 5000 bees each. No winter losses here.

Here is a picture too of one of our biggest apiaries in the north of our country, 250 single-walled 10-frame hives wintered in a square enclosure of three stories. The picture shows only one aisle of this remarkable building. In May these hives will be scattered in groups of fifty all over the province of Friesland.

Henry Meijer,
Arnhem, Netherlands.



Another Reason Why Package Bees Supersede Their Queens

By Joseph Ruel,

Virginia.

FOR the last four or five years or more, I have been buying package bees with queens. I would put them on frames of natural honey and pollen, and also give some of them a frame or two of brood from another hive. The queens would start laying almost immediately and build up to a strong colony and store a nice crop of honey. By this time, it would be getting into the month of July and

upon examining them again I would find at least one super of honey gone and no eggs, or at least eggs in scattered patches. The queen would also be missing. I was running for extracted honey only. As the queens and bees were received in the fore-part of May, it seems to me it was hardly possible that the queens became exhausted from too much laying and then were superseded by the

bees. Anyhow, that was the case with each package of bees received. They would start out fine and store a nice crop of honey, but along in July part of the honey and queens would disappear.

Of course, I could easily account for the disappearance of the honey, but it seems to me that at least a few of the queens should pull through. The farmers around here cut their clover hay early, thus causing the stored honey to be used for brood rearing, etc. In August and September I would generally get a fair to good crop of honey again. If the queens would be allowed to stay on the job, I would get a larger crop of fall honey. It seems that the queens disappear on account of the dearth of honey and the bees have to remain idle. They are also cross and inclined to rob.

This year I bought another package of bees and queen from a leading queen breeder on Dadant frame of brood and honey with the queen turned loose on the comb. They also built up to strong colony and stored more honey than the home wintered colonies, besides storing enough to winter on. Part of the honey disappeared also in this case, but the queen was on the job and is still on the job ready for next year again.

Maybe there is more to this queen shipping proposition than many of us would believe. It seems to me that it would be a good idea to have a discussion in the bee journals from those who have had more experience, not only with package bees and queens, but with bees and queen on one or more frames of brood and honey, especially with the queen turned loose on the brood combs. The queens not being turned loose on the brood combs may account for the missing or superseded queens.

An Aid for Examining Packed Hives



Maybe there is a lot of snow round the hives. Perhaps they have been covered so long it is necessary to dig them out so the bees can take their cleansing flight. Or again, the ground may be just wet and muddy. In either case, it is very unpleasant to stand on one's head in the stuff in order to get his ear close enough to the entrance to see whether the bees are alive.

This awkward, uncomfortable practice isn't necessary. The stethoscope was invented many years ago for the purpose of carrying sounds from where it isn't convenient to place the ear to where it is, and that is just what we want. A handy length of rubber tubing will do for a crude instrument. The diagnostician puts one end of the tube in the hive entrance and the other to his ear. If no sound is heard after the first rap or two, the examiner blows through the hose and the results are positive. There is a murmur or it is memoirs as far as that colony is concerned.

Here is an arrangement that is a little more workable. The tube is fastened to a light strip of wood. A little block is fastened on the bottom

end to be used as a knocker to awaken the bees, and the hose is bent and terminates at the end of the block. With this hookup, a standing person can tap on the hive with the block and direct the tube to the hive entrance. The receiving end should have some kind of ear piece to prevent the operator's ear from getting sore.

It is easier to inspect the hives when there are only a few bees flying as it is otherwise difficult to tell whether the sound comes from within the hive or from the outside. Nothing is needed when examining unpacked hives. When they are disturbed, the sound seems to emanate from the hive everywhere.

The drowsy bees have many different voices to tell they are alive. Sometimes a lively lone bee will come to the entrance asking "zeeeep zeeeep." Again there may be a full rumbling chorus as thousands of comfortable bees sound their slight resentment. Another sound is like a few excited distant shouts. Could a human being learn their language sufficiently to tell the exact conditions inside, whether a colony is queenless, hungry, weak or strong just by listening?

Vernon C. Culhane,
Colorado.

—ABJ—

Caucasians

I secured about 17,000 pounds from 100 colonies spring count and increased to 200 colonies for 1937. I have Caucasian bees.

Julian Dematteis, Iowa.

—ABJ—

Minnesota Lets Them Move This Winter

Weather here cold in spells, but moderations allow bees to adjust their cluster positions. You may also recall my name as being with Tanquary's the past two years.

Melvin H. Beck, Minnesota.



Summer and Winter

Here are two pictures of one of my bee yards showing a summer and a winter scene. The winter entrances were described about a year ago. I would hesitate to change to any other method of outdoor packing. The summer scene shows that the bees at least haven't suffered from this method of protection.

C. W. Phillips,
North Dakota.



All Around the Bee Yard

By G. H. Cale

THE question of nectar secretion is very interesting. The "Pennsylvania Beekeeper" for October contains a paper by W. J. Nolan on "Nectar Secretion" in which it is brought out that plants do not secrete nectar all the time they are in bloom, nor do they secrete the same quantity constantly. Vansell found that bees neglect blossoms with nectar with a sugar condensation of less than 30 per cent in favor of others with a higher sugar content.

With this is bound up the whole question of successful pollination of fruits and vegetables, and also the entire crop the beekeeper gets as surplus from his bees.

The thought suggests itself that perhaps sometime someone will study honey plants with an idea of selecting heavy nectar bearing strains and thus add a new high to our daily gain from our scale colonies.

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I am quite interested in the Canadian Bee Journal, in the trailer extractor unit developed by J. F. Anderson of Oshawa, Ontario. It is a collapsible affair and fastens onto the back of the family car, and yet, seems, when ready for action, to have quite a lot of room. Perhaps it will prove of value to many who find the cost of establishing a large central plant prohibitive and the erection of houses at outyards equally undesirable.

One of the bugbears of the way we produce honey today is the cost of setting up a large shop for honey handling on a commercial basis. Too many beekeepers have put up fine buildings only to have to abandon them because of some unexpected shift in their honey plants or a succession of poor seasons which have made it necessary to move bees away.

— o —

IN a recent trip to Ohio to the short course at Columbus, considerable interest was shown by the beekeepers in my story of our attempt to solve this problem by the establishment of a cooperative or common honey house for a number of producers in our organization. In a rented building from which the equipment can be taken and established elsewhere if it should become necessary, the cost of the equipment and the handling of the honey is distributed, making it

much less of a load on the single individual. In our own case, we also distribute the different phases of seasonal management in such a way that different kinds of work are handled by those who seem best suited. Even the cost of trucks and transportation is borne on a co-operative basis, so that the net results should be a lowered cost of operation per colony. We haven't been at it long enough to know just how it is working.

— o —

S. O. Hillerud, Alberta Provincial Apiarist, in the Canadian Bee Journal for January, describes a novel method used at the Alberta convention. They tried a panel discussion. A few thoughtful men were appointed on the panel, or the discussional group, to take up whatever questions were presented before the meeting and away they went to a round-table which Mr. Hillerud says, "surpassed anything we have ever had before." Usually every man on the panel took a rap at every question. The leader of the discussion kept the thing under control all the time.

This sounds interesting. We wish Mr. Hillerud would give more of the details of just how it is handled.

— o —

THIS is another one of those unusual years, a very cold November; and in between December; a warm January and February; frequent flights, every chance for a heavy store consumption and yet up until March 1, little stores were consumed.

— o —

THE lack of pollen reserves last fall delayed spring brood rearing. We may suffer later from extra heavy spring dwindling, unless pollen sources open up abundantly at an early date. Information coming from the South, however, indicates the season is an early one so far, and that there is no set back at this time.

— o —

AS usual this year maple bloomed too soon. Got caught by frost after the bees had succeeded in storing about half a comb of pollen, which stimulated brood rearing considerably. Sealed brood indicated that the bees began about the latter part of January, but they have not as yet

been able to replace their winter population. These old bees may die off to a low point, so while now most colonies are strong in bees and low in brood, they will soon be low in bees and heavy with brood. (At least, we hope so). The bees from the new brood are the ones that will make the crop.

— o —

THE bees flew well December 31. There were some yellow drones in Caucasian hybrid colonies, and quite a few drones through the yard. So, not all these poor devils get massacred in the fall. Some live! Also we had reported a virgin queen in a colony nearby already emerged at the date of this writing (March 14).

— o —

WINTER packing is again practically of no value. I wish there was some way to know what the winter is going to be like or if, after trying bees packed and unpacked for years, we will have to decide that in central Illinois over a period of years, packing is unnecessary.

— o —

ABOUT when we reach this decision, another winter like that of 1935 and 1936 will come, and go a long way to change our minds. The losses in the spring of that year in winter and from the break-up of colonies too poor to leave during the spring, or because they were drone laying or because they were queenless, gave us a total net loss of 30 per cent. To replace, it became necessary to buy packages because the other bees were not strong enough to furnish divides to make up the loss. The cost of the packages spread over a ten year period, however, was considerably less than the cost of packing each year for ten years.

— o —

THE perennial question bobs up "What to do with weak colonies in the spring?" Remember this, a weak colony with a good queen often makes a strong colony at the honey-flow. A weak colony with a poor queen is never any good. If your records give you any help, perhaps it will be better not to unite the weak colonies. Just leave them and see what the queens will do. Add a comb or two of bees and brood a little later from a healthy colony, or if you wish, add a queenless package of bees. Sometimes you can shake a queenless package out of one of your over-strong colonies and give to a weak colony with a good queen. However, the old rule is still good for weak colonies with poor queens. Unite them, or in some way get them out of the picture so you won't be spending any time or thought on them. They are not worth it.

The Editor's Answers

Pollen Substitute

My bees did not store enough pollen last fall. Would it be practical to put pollen substitute in the yards early? What is the best substitute and how early should it be given?

IOWA.

Answer.—The best pollen substitute we know of has been proposed after experiments by Dr. Haydak, of the University of Minnesota. We have tried it, but know little about it yet. It is made of a mixture of two-thirds soybean flour and one-third dried skim milk. If you cannot get soybean flour, the finely ground soybean meal will do, but it is more wasteful.

This can be put out dry in a shelter box with wire screen front to let bees in but keep animals out, and where the bees can get it when they fly. Or it may be mixed with about one-third syrup and put in flat pans on top of the cluster.

We have tried it both ways. The bees take it readily and seem to rear brood, but it must be given early enough so that they can use it before natural pollen is available. Otherwise, they will not use it readily.

ABJ

Button Bush for Bees

In December, you have an editorial about planting button bush or button willow for bees. Do you think that would do well in Idaho where we have areas of wet ground? Where would one get a start?

You also say that purple loosestrife will grow in wet lands. Would it adapt itself to the intermountain climate? Where can I get the seed?

What do you suggest to use for comb fumigation?

IDAHO.

Answer by Frank C. Pellett, Field Editor.
I feel confident that the button willow will succeed on wet ground in Idaho, as the plant is found growing naturally over a large part of the United States. Mr. Rex Pearce, of Merchantville, New Jersey, offers this seed.

I do not know of purple loosestrife having been tried in the high altitudes of the West and I am not sure how it would succeed, but it would be worth trying. You can also get this seed from Mr. Pearce.

The fumigant commonly used for the wax moth in bee combs is paradichlorobenzene which you will find listed in the bee supply catalogs. It is safer to use than other kinds.

ABJ

Locating Bees at Distance

I have bees in Kansas and southern Nebraska within two miles of 100 acres of fruit trees, but, because of disease, 10 colonies were lost last summer. Shall I leave them there for fruit bloom and possibly get disease or move them to Iowa? In Iowa, they will be 350 miles from me and I have three days a week to work on bees and five days at Easter until the first of June; then I will have full time for the bees.

Will I have to give them air during moving at the entrance only or screen the top too?

I wish to requeen about fifty of them. Most of my bees are Caucasians and the new ones will be Caucasians too. If I move in April, can I requeen them as soon as they are taken off the truck? Would it be all right to kill the queens a day or two

before they are moved and put the new queen in at that time, or should I do it later?

Should I introduce by smoke, scented water, or with the queen cage on top of the frames with the cardboard off, or the queen cage between the frames?

Answer.—I would prefer to move the bees in April. In many parts of Iowa there is an abundant bloom of dandelion about the first of May or 25th of April. Of course, from the standpoint of accessibility, the nearer the bees are to you, the better. Three hundred and fifty miles is too far to have bees and give them personal attention, unless your time is entirely free.

In moving, put a screen on top of the bees and close the entrance tightly. I would not trust the entrance screen alone at this time of year when it is beginning to get warm.

Requeen the bees as soon as they are taken off the truck if there is enough flow to prevent robbing. You had better wait about two days and then go to it. Don't kill the queens beforehand.

Put the queen cage, candy hole up, between the combs, down towards the bottom bar in the middle of the bees.

ABJ

Painting Hives Containing Bees

Is it possible to paint hives with the bees in them?

RHODE ISLAND.

Answer.—It is possible, but not pleasant. If you manage so that you can paint when it is cool enough for the bees to stay in the hive and the paint is mixed so that it will dry rapidly, you will probably get along all right.

ABJ

Removing Drone Comb

I have drawn comb with patches of drone comb. Would you advise removing it down to the foundation?

RHODE ISLAND.

Answer.—No. The drone comb will return, because the base is still drone size. You had better discard such combs and replace with foundation.

ABJ

Maples

Can you tell me the value of sycamore or English maple. It is a very common shade tree here and when it blooms it fairly drips with nectar. Sometimes bees gather some surplus from it. The soil here is a light sandy loam and is almost at sea level.

NEW JERSEY.

Answer by Frank C. Pellett, Field Editor.

All species of maple appear to be rich in nectar, and they are recognized as among the best sources of honey, but since they bloom so early, the bees usually are not strong enough to take advantage of the possible harvest. We do not have much reference to the sycamore or English maple since it is not widely distributed. I think it is true that every one of the maples yields nectar freely and when the trees are common, the beekeeper can expect plenty of nectar during the blooming period if weather conditions are favorable. It often happens that when they bloom it is cold and chilly, and the bees cannot fly.

Cucumbers, Squashes And Pumpkins

I have noticed bees working in great numbers among cucumbers, squashes and pumpkins. Is there nectar in the blossoms or are they only after pollen? Is there nectar in pussy willow and the blossoms of poplar trees?

MINNESOTA.

Answer by Frank C. Pellett. Cucumbers, squashes and pumpkins yield nectar freely and so do the willows. The poplar trees yield only pollen and some propolis.

ABJ

Queen Cell and Cell Cups

Will a colony finish a queen cell if a cell cup is put in the hive?

ILLINOIS.

Answer.—The colony will finish the queen cell if it is in the mood for queen rearing. Otherwise, the bees will tear it down.

ABJ

Stingless Bees

In starting with bees, should I try the "stingless bees." Can you tell me where to buy them?

MICHIGAN.

Answer by Frank C. Pellett.

The only truly stingless bees are found in the tropics and cannot stand our northern climates. They are totally different from honeybees; they are more like bumblebees, and they do not produce much honey. They are of little value for honey production.

Much has been said lately about gentle strains of our ordinary bees and they have been called "stingless." That is not so. They are gentle, but not stingless.

ABJ

Identification

How can I fix it so I will know my own equipment?

PENNSYLVANIA.

Answer.—Take a hot iron and put a brand on all of your equipment including the frames if you wish. Then you can tell your equipment. If the brand is deep enough, it will be difficult, almost impossible, to remove.

ABJ

Shrubs for Ornament And Honey

Have you any suggestions as to low shrubs and flowering plants that can be planted for their beauty and also provide bee pasture along the highways and byways?

How many colonies of bees will twenty acres of alsike clover support in an average year?

ILLINOIS.

Answer by Frank C. Pellett.

One of the best of the shrubs for both ornament and honey is the button bush, the scientific name of which is *Cephaelanthus*. In the wild state it is usually found on low, wet ground, although I think it will succeed very well on ordinary soil. The *Cotoneaster* and the wild olive are also good ornamentals which are valuable to the bees. There, perhaps is nothing better for the bees than the Tartarian honeysuckle which is extremely hardy and widely used as an ornamental. The *Caragana*, or Siberian pea tree, is another which provides good bee pasture.

We can only guess at the amount of support which an acreage of any plant will give to the bees, since it varies so much from year to year. Ordinarily, we assume that for every acre of alsike or sweet clover, there is ample pasture for one hive of bees. It is probably true, however, that during the honeyflow, an acre will support more bees than that under favorable conditions. Perhaps as many as three or four colonies of bees would find ample pasture in an acre of alsike under like conditions.

Meetings and Events

In this department heretofore the reports of meetings which have already been held have been given a reasonable amount of space. We have been criticized many times, however, for publishing detailed reports of past meetings which do not give information other than the general facts about attendance, the speaker's names and subjects. That is usually quite worthless material to readers not members of the particular association about which the report is being made.

Hereafter, we shall not use reports of past meetings other than summarized reports of papers given before the meeting or summaries of talks by the speakers, or items of future events in the affairs of the association. We do not want reports of a general and unimportant nature. Please bear this in mind when sending material for "Meetings and Events."

Detailed statements of meetings to come with dates, places, speakers and subjects are always welcome. Even though they may have to be reduced because of the limitation of space, every effort will be made to give them advance position.

One Day School In Michigan

On April 12, in connection with the regular meeting and election of officers of the Ionia-Montcalm Beekeepers' Association, Mr. R. H. Kelty has planned to try out a one day school, using the following program:

10:00 A. M.—A Year in the Apiary—R. H. Kelty.

1:00 P. M.—Swarm Control—R. H. Kelty.

2:00 P. M.—Foulbrood Control (Colored Moving Picture)—V. E. Mock.

3:00 P. M.—Use of Bees In the Orchard—R. H. Kelty.

4:00 P. M.—Talk by Ralph Blackman on his Florida Trip.

Wallace C. Greenleaf,
Secretary-Treasurer.

— o —

Complete Association Support.

The Seneca County Association is setting aside 15 cents from the dues of each member which will be given to the American Honey Institute.

John F. Buchanan, Sec'y.

— o —

Association Backs Foulbrood Cleanup.

In Black Hawk County, (Iowa) we began a foulbrood cleanup in 1925, backed by the county association, and have succeeded in eliminating most of the disease in a county wide area. Nearly all small beekeepers had disease and they were compelled to cleanup. They have not rebuilt to any extent.

We had a complete failure of honey last year and almost as bad during 1934 and 1936, so interest is very low and our organization has done little.

Winifield Scott, Sec'y.

— o —

Parsons Home Burns (Florida).

On December 24, the home of C. C. Parson, Bluffspings, Florida, burned completely. None of the contents was saved and the family were barely able to escape with their lives.

— o —

Ohio Beekeepers' Association,
January 24, 1938.

Meeting called to order by the president of the association—Mr. Coulter. He briefly reviewed some of the conditions confronted by beekeepers for 1937 and pointed out some of the optimistic aspects for the coming season, such as the enormous stand of clovers over the state.

Report of the Treasurer and Secretary was read and accepted.

— o —

Report of the State Leader for American Honey Institute.

Penn G. Snyder, Chairman:

Mr. Snyder had written to Prof. Russell H. Kelty, president of the American Honey Institute, concerning the advisability of pushing an active campaign for meeting Ohio's quota. Since the new plan for raising has just been proposed and could not be put into operation until after the harvest period of 1938, it seemed advisable to wait until the latter part of 1938 before taking any definite action.

W. E. Dunham brought up the subject of warning posters against stealing and molesting in the apiaries of commercial operators. He left the thought with the growers that possibly the association could set aside a definite amount as a fund to build up for the above purpose. Penn G. Snyder stated he thought the "warning posters" would have greater weight if they could be signed as: Ohio Beekeepers' Cooperative Association. Mr. Snyder emphasized the need of such a service rendered to its association members. Mr. R. D. Hiatt related his experiences of molesting of colonies in some of his apiaries and that in one case the

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HELP! HELP! HELP!

Did you receive your copy of the 1937 Institute Annual Report? This year, as a means of helping us to know whether or not our members received their copy, the mailing envelopes carried the notice "Return Postage Guaranteed." To date, we have had returned to us about 30 copies marked either "Unclaimed," "Unknown," or "Moved, left no address." If you have not received your copy, or if your address has been changed since your membership was sent to the Institute office, will you help us to get Institute releases to you by sending us your correct address now before our next mailing is sent out.

WILLAH GOODMAN.

Read in American Bee Journal Today What Will Help You Tomorrow

offenders were convicted.

Mr. W. P. Smith made a motion for the president of the association to appoint a committee to study the feasibility of the association to undertake such project. Penn G. Snyder seconded the motion and motion carried by vote.

"Warning poster" committee appointed by president: E. E. Agler, chairman, R. D. Hiatt, Merle Young.

Business session came to a close and educational sessions commenced at 10:25 A. M.

After Lloyd C. Gardner's talk on "Some New Services the Association Can Render," Mr. Coulter appointed a committee whose function was to study feasibility of insurance financing loan services, etc. Committee to be designated as: Committee on Service for Association. W. A. Coulter, chairman, Emerson Long, Lloyd C. Gardner, A. I. Root Company, Fred W. Muth Company, Clyde Wheeler.

Monday P. M.

Mr. E. E. Agler discussed the feasibility of encouraging out-of-state competitors at the honey show at Ohio State Fair. He suggested that commercial companies be contacted to give trophy cups as prizes for this class at the honey exhibit. President Coulter appointed the following committee to study proposal: W. P. Smith, E. E. Agler, S. Bailey.

At this time the president appointed the following committees: Resolution Committee: Penn G. Snyder, Merle Young, Clyde Wheeler. Nominating Committee: Penn G. Snyder, Merle Young, Clyde Wheeler. Banquet Committee: Seymour Bailey, Raymond Bailey, Ed. Selfe, R. D. Hiatt, Penn G. Snyder, Mr. Adelman. Permanent Educational and Research Committee: Fred B. Orr, Emerson Long, H. H. Root.

Wednesday P. M., January 26, 1938

Mr. Durrant stressed the advisability of scheduling the main business session of the association on the second day of the program. The secretary of the association made comment that the main business session could be planned for 4:00 P. M. Most of the members seemed to think that 1:30—2:00 P. M. would be preferable. Everyone voiced the sentiment to have this session scheduled when the largest attendance was present.

Mr. Coulter asked for the report of the Resolutions Committee, which was presented by Mr. Snyder.

Resolved that the Resolutions Committee put the following proposition before the members during our business meetings:

That our secretary be requested to contact several manufacturers of glass and tin containers to determine
(Continued on page 76)



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Over 250	2.75 each

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H. PETERMAN : LATHROP, CALIFORNIA

the possibility of association members obtaining better prices on packing needs, than can be obtained by the individual. This would be a great inducement for non-members to join the association.

Resolved that the Ohio Beekeepers' Association have their secretary draft a letter to the Director of Agriculture, Mr. Earl H. Hanefeld stating our needs, which not only benefit the beekeepers, but all fruit and clover growers of the state of Ohio, for increased funds appropriated for Apiary Inspection Work done by the state. Said amount not to be less in amount than \$10,000.00 —this amount being less than appropriated for similar work in several adjoining states.

Resolved that the Ohio Beekeepers' Association express their thanks to Director H. C. Ramsower for his courtesy and cooperation in allowing us to use the Ohio State Building for conducting our most interesting and instructive meetings during Farmers' Week.

Resolved that the Ohio Beekeepers' Association express their heartfelt thanks to Dr. W. E. Dunham for the splendid program he has been enabled to provide for us during these meetings.

Resolved that the Ohio Beekeepers' Association express our thanks to each and every speaker, who has contributed to the success of our program.

Resolved that the Ohio Beekeepers' Association express our thanks for the cooperation and assistance provided by Director Edmund Secrest, and Prof. J. S. Houser, Chief Dept. Entomology, Ohio Experiment Station, Wooster, Ohio.

We feel that the work accomplished by Dr. W. E. Dunham is of great value to the entire agricultural population of Ohio and we wish to express our thanks for his cooperation in the apicultural investigations.

Resolved that we as a body express our heartfelt thanks to W. A. Coulter for the very valuable work which has been accomplished during his two year term of office.

As it has been customary to change our presiding officer every two years, we felt it almost compulsory to follow that law.

Resolved that the Ohio Beekeepers' Association express their appreciation to Dean John P. Cunningham for his interest and support in the apicultural program for Ohio and pledge its loyal support for agricultural education in Ohio.

Report of Nominating Committee.

Penn G. Snyder, Chairman.

President, Lloyd C. Gardner; Vice-President, Emerson Long; Secretary-Treasurer, W. E. Dunham.

R. D. Hiatt, motion report be adopted. Durrant, seconded motion. Report adopted.

Farm Chemurgic Council.

The fourth annual meeting of the Chemurgic conference will be held at Omaha, Nebraska, April 25, 26 and 27. As a feature of the conference, a visit will be made to the Atchison Agrol plant where power-alcohol blends are being made and sold to approximately 2,000 service stations in eight mid-western states.

Dr. Harry A. Barnard, formerly president of American Honey Institute and now officially connected with the National Farm Chemurgic Council with headquarters at New York City, will be glad to shake hands with any beekeeper coming to the fourth conference. Sometimes someone with a vision and a little application will perhaps figure out some way to set honey into the industrial program (or wax or propolis). There is much good thought which might be used to advantage in this direction.

—o—

Wakefield Re-Elected.

J. F. Wakefield, of Provo, Utah, state inspector, was re-elected president of the Utah County association with O. R. Baird, of Provo, secretary; Rulon Hone, of Pleasant Grove and Jerome Cook, of Springville, executive board members. A resolution was adopted to affiliate with the Utah State association.

Glen Perrins,
Utah.**STATEMENT OF OWNERSHIP**

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of American Bee Journal, published monthly at Hamilton, Illinois, for April 1, 1938.

STATE OF ILLINOIS,
County of Hancock, } ss.

Before me, a notary public in and for the state and county aforesaid, personally appeared M. G. Dadant, who, having been duly sworn according to law, deposes and says that he is the business manager of the American Bee Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, rendered by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editors and circulation manager are:

Publishers: American Bee Journal, Hamilton, Illinois.

Editor: G. H. Cale, Hamilton, Illinois; Frank C. Pellett, Hamilton, Illinois; M. G. Dadant, Hamilton, Illinois.

Circulation Manager: James C. Dadant, Hamilton, Illinois.

2. That owners are:
American Bee Journal, Hamilton, Ill., owned by

H. C. Dadant, Hamilton, Ill.
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L. C. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
Louisa G. Saugier, Hamilton, Ill.
Joseph Saugier, Hamilton, Ill.

That the known bondholders, mortgagees and other security holders owning or holding one per cent or more of the total amount of bonds, mortgages or other securities are: None.

(Signed) M. G. DADANT,
Business Manager American Bee Journal.
Sworn to and subscribed before me this
twenty-first day of March, 1938.

MINNIE KING,
Notary Public.

My commission expires Nov. 18, 1941.



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Two-pound	\$2.45 each	\$1.70 each
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An extra queen FREE with each 25 packages. Selected stock, young bees, prompt shipments, safe arrival, fast express.

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If you don't want to be disappointed this is what you want in buying bees

- 1—Bright 3-Banded Italian Bees and Queens.
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Order from this ad and don't be disappointed. 2-lb. pkg. with young queen \$2.45; 3-lb. pkg. \$3.15; 4-lb. pkg. with young queen \$3.85; Young untested queen 75c; 15% discount to dealers. All packages F. O. B. express. Packages by mail add 10c plus postage. Health certificate furnished.

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Including Select, Young, Laying Italian Queens. Shipment by express or Parcel Post. Lowest transportation charges and quickest delivery.



FREE: Descriptive circular and illustrated booklet with directions for the installation and care of package bees

PRICES—2 Lb. package and queen	\$2.45
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Queens, each	.75
Discount to dealers and on large orders	

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OUR high producing queens are honey reared and mated in strong nuclei. Drones are excluded from our full weight packages. Light cages, young bees and satisfaction guaranteed.

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PURE ITALIAN QUEENS STOCK IMPORTED FROM NORTHERN ITALY

Pure Italian queens, bred from mothers imported from northern Italy. All leather colored. You'll like them. They are different.

PRICE ON REQUEST.

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3-Banded Italian Bees and Queens

For a good honey crop make sure you buy good bees and queens and to assure you of it try our strain. They work good in damp cool weather. No disease, satisfaction guaranteed. Write for circular.

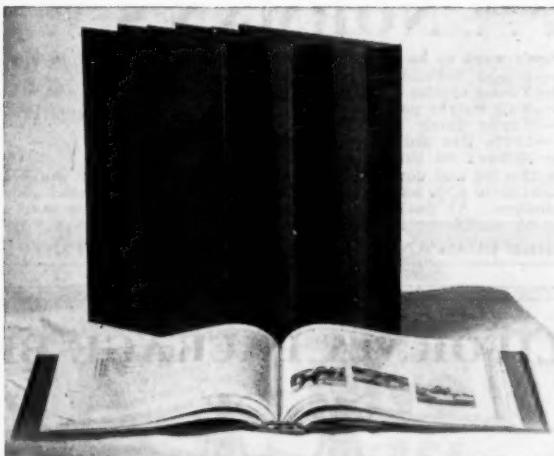
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QUEENS

Genuine Three-Banded Italians
Service and Quality Guaranteed.
Untested 75c each. Tested \$1.50.

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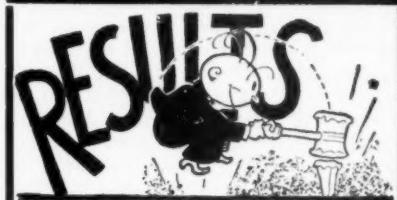
IS IT IMPORTANT TO YOU to get your package bees and queens on date specified? Then, why delay placing your order?

We are not the biggest shippers of packages and queens but we try to rank with the best in quality and service.

We personally supervise the preparation of each package and the selection of each queen.

Twelve years selecting and breeding for production and ease of handling. Queens 75c; 2-lb. package \$2.45; 3-lb. package \$3.15. 15% Discount to dealers.

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A FEW MORE CENTS NOW WILL
MEAN A FEW MORE DOLLARS
AFTER THE HONEY CROP.

2-Lb. pkg. with selected queen	\$2.50
3-Lb. pkg. with selected queen	3.25
1-Comb brood, 2 lbs. bees, queen	3.00
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Selected queens, each	.75

We do not ship old queens already introduced.

HONEY BOWL APIARIES

RESERVE, LOUISIANA



HONEY WANTED

ALL GRADES
COMB AND EXTRACTED

Any quantity.

(Reference, First National Bank)

Italian Bees and Queens

Especially selected for
HONEY-GETTING, THRIFTINESS
AND GENTLENESS.

2-Lb. pkg. with young laying Queen	\$2.45
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Select young laying Queens	.75

15% discount to dealers.
Satisfaction, Safe Delivery, Honesty and Promptness Guaranteed.

R. B. HERIER, Valdosta, Ga.

The BEEKEEPERS ITEM

The Southern beekeepers own magazine, but read by studious honey producers everywhere.

Send \$1.50 and get both magazines a full year.
BEEKEEPERS ITEM, San Antonio, Texas



THREE BAND ITALIAN BEES and QUEENS

Shipped Over Weight
We ship you young thrifty bees and cell queens replaced. If not satisfied please place your order with me early and I will satisfy you.

W. A. FLETCHER, Garland, Texas

Crop and Market Report

Compiled by M. G. Dadant

For our April Crop and Market page, we asked reporters to answer the following questions:

1. How have bees wintered?
2. What is their condition now?
3. Are there plenty of honey plants?
4. Are climate conditions favorable for their development?
5. How much honey unsold?

Bees Wintered.

As one would suppose with such an open and mild winter as we have had, bees have gone through in very satisfactory fashion in most cases. The difficulty has not been in wintering but in whether or not there were sufficient young bees last fall to carry through. In many instances there probably was not and the open winter and warm weather in that case has caused a condition which one might term as spring dwindling. Small clusters will require considerable "mothering" to build up to normal colonies in time for the honeyflows.

As to actual loss of colonies, this has been relatively insignificant this season. The only particularly heavy losses being reported in California where likely some 20,000 to 30,000 colonies have succumbed to the flood.

Condition of Bees.

As stated in our previous heading, there has been apparently considerable spring dwindling on account of the poor condition of the colonies last fall and the open winter, causing the old bees to die more rapidly than they likely would in a cold winter. However, colonies which were anywhere near normal are coming out very rapidly. The entire South reports bees in more than average condition and prospects unusually good for colonies which will be ready for the honeyflow or perhaps will be swarming too early.

One condition applies to practically all of the clover belt extending into the intermountain territory, and that is, that the open winter has caused the bees to use considerable stores and there is likely to be a lot of starvation this spring or cessation of brood rearing unless beekeepers are careful and keep the bees supplied with sufficient feed to continue the brood rearing cycles without interruption.

California reports the possibility of muddy roads interfering with proper feeding of bees in some sections and a consequent loss of many colonies. This, of course, is also an aftermath of the flood.

We would warn our younger beekeepers to watch carefully after your bees during this spring period not as to colony strength particularly, but as to stores. Bees building up early in spring are advantageous if there are sufficient preliminary flows to keep them going. Otherwise perhaps an early buildup condition may be of disadvantage in that bees will reach their peak before the major flow.

Number of Honey Plants.

Honey plants throughout the South and along the coastal range seem to be satisfactory in amount. Texas particularly and Louisiana report excellent conditions as to honey plants with prospects far better than they have been for several years.

Throughout the white clover areas there is no doubt

but that there will be more white clover than in 1937 but nothing like a bumper amount coming out into the spring season. However, very often a fair amount of white clover may yield more than a large acreage under unfavorable nectar producing conditions.

As to the sweet clover sections, it is the writer's opinion that there is more sweet clover growing already this year than was the case at the same time last season. It is true, of course, that the open winter in many sections has meant that there has not been sufficient moisture. However, in the intermountain sections in practically all instances, the amount of snow compares very favorably with that of normal and apparently there is much more than in the past two years when there were deficiencies.

Climatic Conditions.

In very few instances do we find reports of drought or badly needed rain. However, most of the North and Northwest could very satisfactorily use more moisture as the amount of subsoil moisture is not great.

Kansas perhaps reports as poor conditions as any and some sections of Nebraska similarly and extending down into Oklahoma and the Panhandle of Texas. In these sections there has never been sufficient rain to make up for the unusual drought they had previously.

I count on my report twelve states at least claiming that they need rain more than normal to keep the honey plants coming satisfactorily. The conditions, however, are far better than a year ago when almost all reports were of shortage of honey plants and shortage of rainfall.

Honey Unsold.

While it is true that honey has been more or less of a glut on the market since the holidays, still the amount of honey left on hand in the hands of beekeepers is relatively small. No more, we believe, than last season.

Some of the states reporting are as follows: New York 10%, Georgia 5%, Tennessee 5%, Pennsylvania 5%, Michigan 10%, Minnesota, North Dakota, South Dakota each 5%, Oklahoma 5%, Colorado 15%, Utah 5%, Washington 15%, Idaho 15% and California 20% of last year's crop on hand. We estimate these figures as being rather liberal.

Just what is in the hands of the packers is a question, but undoubtedly it is true that the recession has resulted in a lessened demand for honey. Really it has resulted in the short crop of 1937 being sufficient to take care of the country's needs until the new 1938 crop becomes available.

As stated last fall, white honey was disposed of readily and there is very little white left in the country today. A few carloads on the western slope of Colorado and scattering cars elsewhere. Amber, however, is still in fairly plentiful quantity. The last government report states an increasing demand during the past three weeks and it is very likely that all of the honey will clean up without any difficulty. However, beekeepers who held higher prices in the spring are likely for the same disappointment as a year ago.

In Canada, honey is completely cleaned up and beekeepers are encouraged. In fact there will likely be much increase throughout all provinces in view of the cleanup sales and the good prices for honey.

WANTED — HONEY
Jewett & Sherman Co.
Milwaukee, Cleveland, Kansas City, Brooklyn

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Write for Our Special Club Offers
AMERICAN BEE JOURNAL

Iverson Honey Company (Not Inc.)
Successor to
Edwin H. Guertin, 201 N. Wells St., Chicago
Extracted Honey bought and sold
Reference: First National Bank of Chicago.

The = BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

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As a measure of precaution to our readers, we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

FOR FINE PACKAGE BEES AND QUEENS of the three band Italian stock. Let us fill your order. Carolina Apiarie, A. E. Gardner, Mgr., Rt. 5, Burlington, N. C.

PACKAGE BEES AND QUEENS—For the past five years I have been producing bees and queens in this sub-tropical climate under natural conditions from my northern stock. Let me explain why these packages are producing upward to four hundred pounds honey in my Dakota Apiarie and very little superaed.

R. D. Jenkins, San Benito, Texas.

CAUCASIAN BEES AND QUEENS, extra gentle, prolific, hardy and winter in the North like their own country. Long-tongued, dependable workers. Prices, 2-pound package bees with queen \$2.45; 3-pound package bees with queen \$3.15. 15% discount to dealers.

P. B. Skinner Bee Co., Greenville, Ala.

GOLDEN QUEENS, excellent quality that produce hardy, gentle workers, personally reared. Untested 75c; tested \$1.50. Health certificate. Satisfaction guaranteed. O. E. Brown, Route 1, Asheboro, N. C.

PACKAGE BEES WITH QUEEN INTRODUCED eliminates loss of queens. Send for free folder. A. O. Smith, Mount Vernon, Indiana.

PACKAGE BEES that will please you. Sternenberg Bros., Lockhart, Texas.

THE VERY BEST three band Queens and Package Bees to be had. All guaranteed, backed by thousands of dollars of capital. Write for prices, description before buying. The Robinson Apiarie, Bartlett, Texas.

BASSETT'S ITALIAN QUEENS and Package Bees. We are prepared to furnish you. Don't wait. Book your order now. IXL Apiarie, C. Basset, Prop., Sutter, California.

PACKAGE BEES ITALIAN—CAUCASIAN YOUR CHOICE. 2 lb. with queen \$2.45; 3 lb. with queen \$3.15. Guaranteed. Crenshaw County Apiarie, Rutledge, Ala.

PACKAGE BEES—Reliable Italians. Careful service and satisfaction guaranteed. Special prices. Circular free. Elevation Apiarie, Milano, Texas.

MY CAREFUL BRED QUEENS and Package Bees will mean dollars to you. Now shipping. Let me hear from you. D. P. Green, Rt. 2, DeLand, Fla.

MACK'S QUEENS—They speak for themselves. Can book orders for few hundred more queens for delivery latter part of May. Disease free and fully guaranteed. May, 75c; after June 1st, 50c.

Herman McConnell, Robinson, Illinois.

CHOICE QUEENS from selected strains of Caucasian and three-banded Italian stock. Write for prices and descriptive circular. E. J. McNay, Davis, California.

UTILITY BEAUTY STRAIN Pure Italians. Package Bees and Queens. 2 lb. \$2.50; 2 1/2 lb. \$3.00. Select young queens 75c. Select tested or export \$1.50. Wallace R. Smith, Mount Vernon, Indiana.

LEATHER COLORED ITALIAN BEES and Queens. Try us with an order. We will please you. Dixieland Apiaries, Greenville, Ala., Star Rt. West.

GOLDEN ITALIAN QUEENS of fine quality. Select untested 75c each. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, N. C.

PACKAGES BEES Supplied with Young Three-banded Italian Queens. Excellent quality that produce hardy, gentle workers; personally reared queens that are the best. 2 lb. package bees and queen \$2.45; 3 lb. package bees and queen \$3.15; select untested queens 75c; select tested \$1.25. Discount to dealers or on large orders. Health certificate furnished. Satisfaction guaranteed. Hafley Bros., Gause, Texas.

GOLDEN ITALIAN QUEENS that produce good honey gatherers. Tested \$1.50; select tested \$2.00; untested 75c. D. T. Gaster, Rt. 2, Randleman, N. C.

CAUCASIAN BEES AND QUEENS, April, May, 2 lb. package \$2.45; 3 lb. package \$3.15; untested queens 75c each. Safe arrival, satisfaction. Tillery Brothers, Rt. 4, Box 132, Greenville, Ala.

FOR A GOOD HONEY CROP try our Three-banded Italians. Alamance Bee Company, Graham, N. C.

PROMPT DELIVERY

CAREFULLY PREPARED PACKAGES Inquire about my three-banded Italians. Hugh Graham, College Station, Texas.

EXTRA YELLOW Italian Queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 75c each; tested \$1.50. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

TENNESSEE PACKAGE BEES AND QUEENS. A superior strain of Italians. Great honey gatherers. Agreement prices. N. S. Gladish, No. 5 Hobbs Rd., Nashville, Tenn.

NOTICE YOU NORTHERN BUYERS, Golden Italian bees and queens that get the honey. 2 pound package \$2.45; queens 75c, Oregon Bee Co., Route 1, Box 296, Salem, Oregon.

MILLER BROTHERS, Three Rivers, Texas. Only exclusive Caucasian breeders west of the Mississippi. Packages with queens introduced.

HONEY FOR SALE

LIGHT AMBER Mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

HOWDY'S HONEY: Small lot of white clover and amber, mixed extracted in sixties still on hand. Howard Potter, Ithaca, Michigan.

WELL RIPENED clover extracted sixties 8c; amber 7 1/2c. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Northern white extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York, New York.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich Street, New York.

FOR SALE—Fancy, well ripened, white sweet clover honey in 60-lb. cans. Extra good quality. Dadant & Sons, Hamilton, Ill.

WHITE sweet clover extracted in new sixties. Prices reasonable. Case or ton lots. Satisfaction guaranteed. Harry C. Kirk, Armstrong, Iowa.

FOR SALE—Honey, Imperial Valley Beekeepers Ass'n., 847 Heber Avenue, Calexico, California.

BUCKWHEAT Extracted Honey in sixties, 6 1/2 cents. Clarence Dalrymple, Dayton, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honeys. We stock all varieties. HAMILTON & COMPANY, 108 West Sixth St., Los Angeles, California.

NEW CROP Tupelo Honey ready May 15th, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Fla.

HONEY AND BEESWAX WANTED

WANTED—Carlots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, California.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

WANTED—White and Amber Extracted Honey, any quantity; also beeswax. Write THE FRED W. MUTH CO., Pearl and Walnut Sts., Cincinnati, Ohio.

CASH PAID FOR CARLOADS AND LESS THAN CARLOADS. All grades of honey. Send sample and best price. C. W. Aepple Company, Oconomowoc, Wisconsin.

WANTED—White or Amber Extracted Honey. LaVerne Roose, Sac City, Iowa.

FOR SALE

BEE SUPPLIES, honey pails and jars. Cash paid for all grades of honey. A. Tennenhouse, 12213, 12th St. Detroit, Michigan.

GOOD OPPORTUNITY FOR RIGHT PARTY TO TAKE OVER HONEY AND BEE SUPPLY BUSINESS OF COLORADO HONEY PRODUCERS' ASSOCIATION, DENVER, COLORADO, ESTABLISHED 1899, ALSO THEIR GOOD WILL AMONG TRADE AND PRODUCERS. WRITE FOR PARTICULARS.

1 ROOT automatic 4 frame power extractor in good condition. 2-100 gal. honey tanks, uncapping can, steam knife and generator. A. F. Lewis, LeRoy, Minn.

FOR SALE—Clean secondhand bee equipment, inspected. 100-10 frame bodies, 50c each. 50-10 frame comb honey supers, 25c each. J. T. Henricks, Roberts, Ill.

100 CLEAN COLONIES bee equipment 300, six acres fruit, garden, alfalfa, home, honey house, garage, other buildings. Best beekeeping location. Wm. L. Ball, Lewiston, Utah or Superior Honey Company, Denver, Colorado.

40 COLONIES of Bees, 10 frame hives, no disease. Bees will be in Apple Grove Orchard until Robert Clark begins to use poison spray. Extra supers and hives. My age says quit. W. H. Pearson, Mitchellville, Iowa.

TO CLOSE OUT—Hoffman frames, short top bar, slotted bottom bars, per 100, \$3.50; long top bars, \$4.00; M. D. extracting supers with frames, per (5), \$4.00; crimp-wire and 4 1/2x16 1/2 in. thin, super foundation 48 cents per pound; No. 1, 10-frame beeway comb honey supers complete, per (5), \$3.30. Smith's Bee Supply, box 603, Billings, Montana.

WANTED

YOUNG MAN 27 wants apiary work. 5 ft. 6, weight 145, ten years' experience. Kenneth Lawrence, Route 1, Reeds, Mo.

WANTED—Experienced beekeeper. Write personal information, wages and references first letter. Work to start May 1st. O. A. Sippel, Big Timber, Mont.

**NO MOANS
NO GROANS
NO DRONES**

"When summer is over
Will you be in clover
Or will you be the one to groan
For not having foresight
To order your bees right?
Our bees bring the bacon home!"

2 Pound Package with Queen	\$2.45 each
3 Pound Package with Queen	3.15 each
Select Italian Queen	.75 each

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WRITE FOR DEALERS' DISCOUNT IN LARGE LOTS.

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Does Your Package Bee Money Bring Full Value to You?

Will it buy the good service you have a right to expect?

We realize that the intelligent and far sighted buyers will demand good packages with good service throughout;

A clean and light package.

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A package of vigorous young bees and queen.

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A 25% overweight package to insure full weight at destination.

A package of reliable three-banded Italian bees.

Our long service as successful shippers enables us to fully guarantee our service to you. Unless you buy wisely you will experience heavy losses in your honey crop.

Prices:	2-lb. Package with select laying queen	\$2.45
	3-lb. Package with select laying queen	3.15
	Select laying queen each	.75

15% Discount to authorized dealers.

GARON BEE CO.,

Donaldsonville, La., U.S.A.

The Postscript

Gossip About the Office in the Making of the Magazine

From an old bulletin of the U. S. Department of Agriculture, entitled "The Wild Alfalfas and Clovers of Siberia" I learn that the Persian clover mentioned some months ago as growing in Louisiana was brought to this country from India by the Bureau of Plant Industry in 1906. It seems to have been lost sight of until recently when it has again attracted some attention. When Dr. N. E. Hansen visited Turkestan in 1908, he was attracted to this plant which was just then being introduced from Persia, and recorded the fact that the flowers were rich in honey and very attractive to the bees.

Indications are that it may prove to be a valuable addition to the bee pasture of the Gulf Coast area.

ABJ

Concerning the yellow flowered Semipalatinsk alfalfa mentioned in February Postscript, Mrs. C. W. Kruse, of Lemmon, South Dakota, writes: "We put in a ten acre field of this alfalfa 20 years ago. It is still a good stand, in fact we have not lost a plant. It has stood seven years of drought. Grasshoppers ate it to the ground and jack rabbits dug into the ground to eat the roots. Other alfalfa fields are all dead, the native grass is killed out, but the yellow flowered is still there and makes good hay."

Since the plant yields but little seed the price is of necessity high but it is not necessary to sow very much seed. The plant is spreading in habit and if the seed is carefully distributed two pounds per acre will be sufficient. Mrs. Kruse has a few pounds of seed at \$3.00 per pound.

ABJ

There has been urgent demand from friendly beekeepers for another field meeting at the experimental apiary at Atlantic this coming summer but we think it better to wait until rains come again to restore more normal conditions. It was so desperately hot and dry at the time of the last meeting that most of our plant life was shriveled and dead. Once considered a sure crop region this locality has suffered severely for the past few dry years.

ABJ

Joseph Breitbarth, of Niota, Illinois, calls attention to the fact that seeds of the Japanese pagoda tree, *Sophorea Japonica*, and the fireweed, *Epilobium angustifolium*, can be secured from Rex D. Pearce, of Merchantville, New Jersey. Pearce offers many rare seeds not commonly offered by seedmen.

ABJ

Niels A. Nelson, of Rolfe, Iowa, is enthusiastic about a boy who when only eight years old became an enthusiastic beekeeper. The lad is Stanley Riedel and Mr. Nelson sees in him a coming beeman. It is rare to find youngsters of that age who have no fear of stings and one who starts so young is likely to demonstrate real success.

ABJ

Leroy Jones, of Scottsdale, Arizona, is still experimenting with the gathering of pollen from the date palm to feed to the bees as mentioned in November Postscript. Those who wish to experiment along this line may find it to their advantage to correspond with Mr. Jones. To find ways and means to overcome pollen shortage is an important problem for the honey producer and those who contribute to its solution will make an important contribution to the prosperity of the industry.

ABJ

Who can question the wisdom of Henry Ford when he said: "No unemployment insurance can be compared to an alliance between a man and a plot of ground. With one foot on the land the individual is doubly secure, with a job to supply cash and land to supply food."

From A. F. Sievers, of the Bureau of Plant Industry, I learn that the large amount of coriander seed imported into this country is largely for distillation into a highly aromatic volatile oil. It is used in masking undesirable flavors in medicinal preparations and to some extent in flavoring candies.

We are advised that the market will consume relatively large quantities of the seed but that the price is low. Seed is now imported from Morocco at 6½ cents per pound which probably accounts for the fact that it is not commonly grown in this country.

Coriander oil sells at from \$20.00 to \$22.00 per pound which indicates a large amount of seed is needed to produce a small amount of oil. The prospect for bee pasture from coriander fields is therefore not very promising.

ABJ

A Pennsylvania beekeeper who is within reach of 100 acres of garden peas wants to know whether the bees get any honey from them. I can find no record of honey from garden peas and have never seen honeybees working the blossoms. Has any reader a different observation.

ABJ

The best report of the blue flowered sweet clover or balsam clover comes from Ernest Lowe, of Abbotsford, British Columbia. The first year from our small sample of seed he secured a pound of seed. The following year after replanting that he secured twenty pounds of seed and on heavy land, which fails to agree with the report of another correspondent who reported good results on sandy land but failure on rich soil.

Prof. D. B. Johnstone-Wallace, of Cornell University, has been instrumental in the spread of bird's foot trefoil, (*Lotus corniculatus*) among New York farmers in an effort to make better pastures. Perhaps this may prove to be a new source of bee pasture for that region. The new book, "European Bee Plants," by Rev. Yate Allen states that in England it is of real value to the beekeeper and that pollen grains from that plant are found in nearly every sample of clover honey.

ABJ

My attention has been called to the fact that Cossack alfalfa, (*Medicago media*) has withstood the drought and cold of northern Alberta during the same period as the yellow flowered Semipalatinsk variety mentioned editorially in our March issue. At the same time fourteen other strains including the much advertised Grimm died out within three years under the same conditions. Cossack and the yellow flowered variety have remained in the same plots for 23 years without reseeding. Cossack alfalfa, however, is thought to be a natural hybrid between the yellow flowered alfalfa and the common alfalfa and may inherit its hardiness from the yellow flowered parent.

ABJ

It seems impossible to ascertain just what may be the requirements of the blue flowered sweet clover. Recently we wrote that reports indicated sandy soil. Now comes a letter from W. E. Hallowes, of Peavine, Alberta, who reports that it did well for him on black garden soil but that the season there is too short. Dr. Martin, of Iowa State College, suggests that failures may be because of lack of the proper inoculating bacteria.

ABJ

Edward D. Wirth, of Brooklyn, suggests a dinner at an Italian restaurant in New York to answer my question as to who buys all the coriander imported into this country. "The Italian people use these seeds as a flavoring in bread."

FRANK C. PELLETT.